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Except as indicated, abstracts are by William H. Stickel, editor.

WILDLIFE--BIBLIOGRAPHY, BIOGRAPHY, HISTORY

McAtee, W. L. (3 Davie Circle, Chapel Hill, N. C.) ROBERT RIDGWAY. Nat. Mag. 48(4): 207-209, illus. April 1955.
Interesting account of the life of one of America's greatest ornithologists.

Phillips, Grace D. GUARDIAN OF THE ROCKIES. Natl. Parks Mag. 29(120): 8-15, illus. Jan.-Mar. 1955.
Life and work of Enos Mills--naturalist, outdoorsman, conservationist, and father of Rocky Mountain National Park.

Stegner, Wallace Earle. BEYOND THE HUNDREDTH MERIDIAN: JOHN WESLEY POWELL AND THE SECOND OPENING OF THE WEST. Introduction by Bernard De Voto. Houghton Mifflin, Boston. xxiii + 438 p., illus. 1954.

WILDLIFE--EDUCATION

Bromley, A. W. (N. Y. Cons. Dept.) EVERY CONSERVATIONIST AN EDUCATION SPECIALIST. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 5 p.
Not all conservationists can be education specialists. They would get nothing else done if they tried to be, and they haven't the special training. We must have specialists who can put out information in packages that the public and mass media will accept. This is no task for amateurs, but it is vitally important.

Connolly, Frank A. (US Forest Serv., Upper Darby, Pa.) CAN YOU GET ON TELEVISION? Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 6 p.
Much practical advice on preparation of TV programs.

Gordon, Eva L., Richard B. Fischer, and Verne N. Rockcastle. FALL CHANGES. Cornell Rural School Leaflet 48(2): 1-32, illus. Fall 1954.
Guide to elementary nature study in autumn or winter. Treats such subjects as cause of changes in day length and temperature, ice, ways in which plants are adjusted to winter, hibernation, storing of food, overwintering eggs and adults, etc.

Vinal, William G. NATURE RECREATION. Am. Humane Educ. Soc., 180 Longwood Ave., Boston 15, Mass. 322 p., illus. Revised and reprinted 1954. $3.50. [From Natl. Parks Mag. 29(120).]
"The purpose of this book is to serve as an aid to nature education. Probably no other book offers as thorough a coverage of ideas for parents and youth leaders... A mere perusal of the book forces wonderment over the wealth of ideas and suggestions it offers. ...even the most elementary phases of organizing nature study classes and clubs have not been overlooked. In five chapters, Part I deals with The Philosophy of Nature Recreation; while Part II, entitled Applied Nature Recreation, covers this subject in eight chapters, among which are the approach to leadership, tools for leadership in field work, leadership responsibilities on the hike and overnight trip, and administrative leadership in the community program for nature recreation. The author stresses the importance of stimulating in the young a proper attitude toward nature..."

WILDLIFE--BIOMETRICS

Chapman, D. G. (Univ. Wash.) POPULATION ESTIMATION BASED ON CHANGE OF COMPOSITION CAUSED BY A SELECTIVE REMOVAL. Univ. Wash., Lab. Statistical Research, Tech. Rep. no. 19. 26 p., processed. Jan. 1955.
"The assumptions involved in this method appear to be simpler and more likely to be fulfilled than those underlying other population estimation procedures. Moreover it will be shown that non-fulfillment of some of the assumptions may involve no serious consequences. This is one of the phases of the method studied in this paper."--V. Schultz.

WILDLIFE--BIOMETRICS--Continued

Jessen, Raymond J. (Iowa St. Coll.) DETERMINING THE FRUIT COUNT ON A TREE BY RANDOMIZED BRANCH SAMPLING. Biometrics 11(1): 99-109. Mar. 1955.
Applicable to mast and other seed production studies.--V. Schultz.

Kendall, Maurice G. (London School Economics.) FURTHER CONTRIBUTIONS TO THE THEORY OF PAIRED COMPARISONS. Biometrics 11(1): 43-62. Mar. 1955.
Applicable to various wildlife research problems, particularly the study of social rank.--V. Schultz.

WILDLIFE--ECONOMIC AND OTHER VALUES

Beckwith, Stephen L. (U. Fla.) WILDLIFE MANAGEMENT IN FLORIDA. Fla. Wildl. 8(11): 18-21, illus. April 1955.
Includes some figures on financial value of Fla. game and provides a good summary of modern wildlife management principles and methods as they apply in Fla.

Buckley, John L. (U. Alaska.) WILDLIFE IN THE ECONOMY OF ALASKA. Biol. Papers U. Alaska no. 1. iii + 44 p., graphs. Feb. 1955. 50¢.
Important study of financial value of Alaskan fish, game, and fur animals. Commercial, recreational, scientific, and esthetic values are considered. The study is based in part on a questionnaire survey. "The total annual value of wildlife, as determined for fiscal 1952, exceeds the combined value of all other industries based on natural resources in Alaska by nearly 200 per cent." The grand total was $118,083,451, of which commercial fisheries contributed $95,839,201. Recreational hunting and fishing contributed $12,394,000. Esthetic values brought some $1,600,000 to Alaska. The average fisherman-hunter spent $279.16 and 16.6 man-days in pursuit of his sport. "Fishing engendered the largest expenditures and provided the greatest number of days of recreation (over half of the totals), followed by big game and small game hunting, and finally waterfowl hunting." "The average hunter obtained 104 pounds of big game, 14.0 pounds of small game, 4 pounds of waterfowl, and an undetermined amount of fish." "...approximately 50,000 people, or well over half of the wage-earners in Alaska, are dependent to a greater or lesser extent upon wildlife for their livelihood." The paper supplies many other facts and figures and tells how they were gathered.

Lampio, Teppo. THE SIGNIFICANCE OF HUNTING IN FINLAND. Suomen Riista 9: 41-60, maps. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Based on 14,362 questionnaires received in 1953. Before sale of game was made illegal in 1953, 12.2% of Finnish hunters sold game. Of all sportsmen, 11.7% considered game indispensable to their families. This feeling was less strong in towns than in country. About 66% of all sportsmen hunted only for recreation. Some 57% of hunters also trapped for fur. Percentage of countrymen who trapped was about 3 times as high as for townsmen. Finland can be divided into 10 natural regions on the basis of economic importance of hunting.

WILDLIFE--NATURAL AREAS AND REFUGES

Allred, B. W. (US Soil Cons. Serv.) HERE STILL IS A LAND PRIMEVAL. Soil Cons. 20(9): 195-201, 216, illus. April 1955.
Relatively detailed account of Wichita Mtns. Natl. Wildl. Refuge, Okla. Much attention is devoted to range types present and the acreage of each that is in a given stage of condition. The range is in considerably better condition than is the surrounding country, and is still improving--and is being actively improved. "This refuge is a large area of grassland with associated wildlife that comes near to simulating primeval conditions... Being able to see this area helps give people a true vision of the power and potentiality of land when it is prime and flourishing... There are too many people who still believe that buffalograss is the best kind of grass for this area. Little bluestem and sideoats grama should play the ranking role on this land; and when they are grazed out and buffalograss takes over, it is a sign that tragedy has set in. It means that the land has lost some of its power to produce forage and litter."

WILDLIFE--NATURAL AREAS AND REFUGES--Continued

Hult, Ruby El. UNTAMED OLYMPICS. Binsford & Mort, Portland, Ore. 267 p., illus. 1954. $3.50. [From review by F. M. Packard, Natl. Parks Mag. 29(120).]
Story of the Olympic Peninsula of Washington from Indian days to the present, with major emphasis on Olympic National Park and the fights for its preservation.

WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Bonner, John Tyler. (Princeton U.) CELLS AND SOCIETIES. Princeton U. Press. (Also Oxford U. Press, London.) 234 p., illus. 1955. $4.50.
An unusual, interesting, and instructive book. The author is a professional biologist and science writer. His purpose in this book is to show--in as interesting and simple way as possible--how animals and plants perform their necessary functions, especially feeding, reproduction, and communication. His approach is that of an enthusiatic naturalist writing for those who know little about biology, not that of a textbook writer. He begins with truly interesting and informative accounts of societies of howling monkeys, fur seals, red deer, beavers, army ants, and termites. These chapters probably will be the most interesting ones to readers of WR, and they have much good, solid information in them. They show how social arrangements serve biological needs, and in so doing bring out answers to many biological puzzles that have only recently been solved by research. From deer and termites, the treatment moves to lower colonial organisms and then to single cells and finally to higher plants. The last few chapters present a simple account of physiological processes and development in animals. Presumably this book is written for the intelligent layman, but even a biology professor would learn a good bit from it. Almost any reader would be fascinated by some of the examples and explanations. Selected references are cited for further reading.

WILDLIFE--BIOTAS, COMMUNITIES, GENERAL ECOLOGY

Munro, J. A. (Okanagan Landing, B. C.) ADDITIONAL OBSERVATIONS OF BIRDS AND MAMMALS IN THE VANDERHOOF REGION, BRITISH COLUMBIA. Am. Midl. Nat. 53(1): 56-60. Jan. 1955.
Notes on 18 species of birds and 10 of mammals. Topics include population fluctuations, behavior, local records, and foods. Data mostly are for 1951-52; they supplement author's 1949 paper (Am. Midl. Nat. 41: 3-138).

Schultz, Vincent, Eugene Legler, Jr., W. H. Griffin, G. A. Webb, R. H. Anderson, W. M. Weaver, Jr., and J. A. Fox. STATEWIDE WILDLIFE SURVEY OF TENNESSEE / A STUDY OF THE LAND, WILDLIFE, FARMER, HUNTER, AND TRAPPER. Tenn. Game & Fish Comm., Final Rep. P-R Proj. W-16-R. 1-506 p. 1954.
Final report of a survey initiated in 1950. Objectives were to obtain, for various game and furbearing animals, reliable and usable information on (1) present and potential ranges, (2) relative population densities, (3) social and economic importance, and (4) relationships to land use practices. A personal interview method of obtaining information was used and an acceptable sampling scheme, known as "area sampling," was utilized in rural Tenn. Sampling procedures were under supervision of Iowa St. Coll. Statistical Laboratory. A total of 5,149 completed questionnaires included the following respondents: 3,560 heads of farm households, 1,378 hunters and 211 trappers. The report has been prepared in such a fashion that detailed analyses and preparation of manuscripts by future writers are facilitated. Some such manuscripts have been published (WR 76: 14, 44, 46, 67). A discussion of the sampling procedure and survey design was prepared as a M. S. thesis in statistics (WR 77: 4) and is being published by the Tenn. Game & Fish Comm.--V. Schultz.

WILDLIFE--NUMBERS AND NUMBER FLUCTUATIONS

Pitelka, F. A., P. Q. Tomich, and G. W. Treichel. (U. Calif., Berkeley.) ECOLOGICAL RELATIONS OF JAEGERS AND OWLS AS LEMMING PREDATORS NEAR BARROW, ALASKA. Ecol. Monog. 25(1): 85-117, illus. Jan. 1955.

A long technical paper that is important for the large amount of factual information and theory that it contains and because of its unusually thorough use of literature. Basically, it is a study of avian predators during a 3-year period (1951-53) when Lemmus sibiricus was increasing to abundance. Studied in connection with this increase were changes in populations of both avian and mammalian predators, territories and breeding biology of avian predators, and competitive relationships of these birds. Species chiefly studied were pomarine jaeger, snowy owl, and short-eared owl. Discussions are given for numerous topics: actual populations of avian predators, changes in sizes of territories, timing of breeding season, changes in breeding success, details of breeding biology, food consumption of young, factors affecting timing and success of breeding, distributional and ecological relationships of 3 species of jaegers, and effect of predators on lemming populations. Authors believe that the high lemming population of 1953 was depressed by at least 90% by predation. Pomarine jaegers seem to be dependent on high lemming populations for breeding and to concentrate at sites of such populations. If this is true, it is difficult to believe that lemming highs are synchronous over large areas. This paper is one that everyone who is seriously interested in population problems, or in the species involved, will wish to study.

Wing, Leonard W. (3875 Vorhies Rd., Ann Arbor, Mich.) LATITUDINAL SLIPPAGE OF BOB-WHITE, HAIRY WOODPECKER, AND DOWNY WOODPECKER CYCLES. J. Cycle Research 4(1): 3-31, graphs. Jan. 1955.

From summary: "A cycle is defined as a fluctuation having (1) length, (2) rhythm, (3) timing, and (4) amplitude." Christmas census data (as birds per hour, 1900-39), for U. S. and Canada were tested for 3 cycles: 3.767, 4.222, and 4.418 years. The quail data evidence the 3 cycles in regionally summed and in state-summed data. Latitudinal phase charts show that each cycle has latitudinal slippage on a regional scale. Epochs of the 3 cycles are concentrated in a restricted part of the possible intervals. Woodpecker data were tested for the 4.222-year cycle. Highs of this cycle for both woodpeckers cluster at the temperature low of the 4.222-year cycle in the southern part of the ranges and at the temperature high in the northern part. A cross-over occurs between about Latitudes 38°-39° N. and 44°-45° N. Regional or environmental influences may make different responses to the same cycle in the same species. The latitudinal slippage of the woodpeckers is the same as that found previously for global pattern of temperature. It is presumed that patterns shown for these 3 birds in U. S. and Canada may be regional expressions of appropriate global patterns.

WILDLIFE--PARASITES AND DISEASES

Muroma, Eero. DIAGNOSIS OF THE INTESTINAL PARASITES OF GAME. Suomen Riista 9: 81-84, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)

Snow hare droppings from some 500 localities in Finland were crushed, diluted, and sampled for eggs of Protostrongylus commutatus, Trichostrongylus retortaeformis, Fasciola hepatica, and Dicrocoelium dendriticum. Fasciola eggs were not found. Incidence and geographic distribution of the other worms named are outlined. This line of research is to be extended to cover the more important upland game birds.

WILDLIFE--MORTALITY FROM INSECTICIDES, WEATHER, CARS, ETC.

DeWitt, James B., James V. Derby, Jr., and George F. Mangan, Jr. (Patuxent Refuge, Laurel, Md.) DDT VS. WILDLIFE / RELATIONSHIPS BETWEEN QUANTITIES INGESTED, TOXIC EFFECTS AND TISSUE STORAGE. J. Am. Pharmaceutical Assn., Sci. Ed. 44(1): 22-24. Jan. 1955.

From summary: Symptoms appeared when quail and pheasants were fed diets containing 0.025-0.050% DDT. Symptoms appeared sooner as percentages increased. Young birds seemed more resistant than adults. Median lethal quantity for adult quail was about 1,200 mg./Kg. Young quail showed no ill-effects after ingesting 3,000 mg./Kg. during 10-week period. Adult pheasants died after ingesting 200-300 mg./Kg. Approximately 600 mg./Kg. were required to kill young pheasants. Quantities of DDT stored in tissues were not proportional to amounts administered or to duration of exposure, but were related to severity of symptoms. Concentration of DDT in breast muscles of birds killed by DDT was about 34 micrograms/Gm. in adult quail and 22 micrograms/Gm. in adult pheasants.

Miles, Virgil I., and Maxwell J. Wilcomb, Jr. (US Public Health Serv., Atlanta, Ga.) CONTROL OF NATIVE RODENT FLEAS WITH DDT APPLIED TO SIMULATE AERIAL DUSTING. J. Econ. Ent. 46(2): 255-257. Apr. 1953.

DDT was applied at rates of 1, 3, and 5 lbs. per acre. Fleas other than sticktights were temporarily reduced in number by the 5-lb. dosage. No damage to wildlife was noted. [Damage has been noted in other studies when DDT was applied at rate of 5 lbs. per acre.]

Rudd, Robert L., and Richard E. Genelly. (U. Calif., Davis.) AVIAN MORTALITY FROM DDT IN CALIFORNIAN RICE FIELDS. Condor 57(2): 117-118. Mar.-Apr. 1955.

Mallards, pheasants, and other birds were found sick or dead in areas where seed rice treated with DDT had been distributed. Some birds had symptoms of DDT poisoning. Experiments were undertaken with penned pheasants and pintails. Rice treated at rate of 1.5 lbs. of DDT per 100 lbs. was offered ad libitum. This was equivalent to 15,000 parts per million. Normal feeding of survivors was resumed after 11 days (pheasants) and 15 days (ducks). Five of the 12 pheasants died in 4-10 days and 2 others showed symptoms. Three of the 6 ducks died in 13-15 days and 1 other was weakened. Pheasants accepted the diet well; ducks did not after 2-3 days. Male pheasants were more affected by DDT than were females. Authors suggest that "mortality may be entirely eliminated by applying chemical and seed separately. There is some indication that application of chemical after germination yields more effective pest control. In recognition of this, many growers have already begun to apply DDT a week or two after sowing."

WILDLIFE--MANAGEMENT--GENERAL

Anonymous. THE CATOOSA WILDLIFE MANAGEMENT AREA. Tenn. Game & Fish Comm. 1-38 p., illus. June 1954.

Attractive bulletin that gives much information on this scenic, 78,000-acre tract in Cumberland and Morgan counties. The area has been cut and burned in the past and most of its soils are not especially fertile. It is well watered and has a good stand of hardwoods and conifers, however, and should become self sustaining from timber income. The land was purchased with PR funds and will be managed primarily for game, but carefully planned timber management is already under way. The bulletin supplies figures on present and expected timber. Wildlife measures are outlined. They include managed hunting, browse plots, scattered clearings, and favorable lumbering practices. Plans call for 1 waterhole and one field of food crops about every square mile. Fishing is also being studied and improved.

WILDLIFE--MANAGEMENT--GENERAL--Continued

Bulger, John Douglas. (Natl. Wildl. Fed., Rt. 2, Groton, N. Y.) CHARTER FOR CHOLAME. Outdoor Life 114(6): 46-47, 58-59, 88-91, illus. Dec. 1954.
How the Cholame Township Sportsmen's Assn. (San Luis Obispo Co., Calif.) brought back game on 250,000 acres of privately owned land. Game in this wheat and livestock area had become scarce by 1945 owing to intensified agriculture. Landowner-sportsman relationships were bad. The Assn. was formed by ranchers and hunters in 1945. With help from the state game department, it installed guzzlers, fenced plots where food and cover were planted for quail, and erected shelters that hold brush piles 6 ft. from the ground. It invented and installed "toenail troughs," which are small basins in which water from a stock trough is automatically kept at 1 or 2 inch level by a simple float valve. These are especially helpful to young birds. Size of harvest is set for each year after careful censuses. No artificial stocking is done, but some tracts are kept as refuges. Habitat improvements mentioned above are well scattered over the range. The 148 members pay only $2.00 a year and can hunt on any of the 250,000 acres. The group assumes responsibility to landowners for damages. Landowners contribute space for the improvements and other members must contribute at least 1 day a year of work on putting in improvements. Techniques have improved with time and testing. Populations of quail, dove, deer, and rabbit are good and apparently still increasing. Landowner-sportsman relationships are excellent.

Cobb, Roland H. (Me. Dept. Game.) SOME CURRENT WILDLIFE PROBLEMS OF THE NORTHEAST. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 6 p.
How well can we predict wildlife effects of a land-use change such as a new impoundment? What do we know of the best way to manage a deer yard for maximum yield? What effect on game will result from various intensities of hardwood cutting? From clear cutting vs. diameter cut? How can we best manage water levels for black duck and muskrat production? Should not construction of access roads into deer problem areas be a legitimate PR activity?

Linnamies, Olavi. HUNTING AND GAME MANAGEMENT IN SIPPOLA COMMUNE. Suomen Riista 9: 126-156, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
An interesting example of how game management systems are being worked out in Finland. The commune has 7 hunting clubs and 1 game management association. The clubs have large areas rented for hunting. The association plans to determine game trends from bag statistics, litter estimates, etc., and then set hunting quotas for the year. The association sees to dog control by registering dogs for tax authorities and receives 10% of dog tax. There are also predator control and game protection activities. Each club is to divide its land into 3-5 tracts, each of which will receive habitat improvement for 2-3 years, so that all club lands will be worked over in 10-12 years. Game management in forested areas should take second place only to timber production. As many hunters as possible should belong to the clubs. An effective educational program is recommended. This paper presents a detailed plan for game management in the commune and gives data on recent game yields.

Studholme, Allan T. (US F&WS, Boston, Mass.) FEDERAL AID, IT'S YOUR PROGRAM. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 5 p.
When federal aid work began, research was the popular activity--now it is something to be avoided or hidden. Next habitat improvement became all the style. The oversimplified, region-wide, shotgun-type programs that resulted are now being viewed cynically. In 1953, 51% of PR funds in NE. states went into development work, mostly on private lands. "Research" got 19%, but most of this was routine data collection. Only 17% went for land acquisition. Maintenance took only 7% and coordination only 6%. What should be done for the future? 1. PR act should be altered to permit all management except enforcement and propagation. 2. All development practices should be evaluated unless of proven value. 3. There is a crying need for good research. 4. See if annual inventories can be justified or improved. 5. Greatly expand acquisition of public hunting areas. Get the good areas before it is too late. 6. Advance program planning gives great advantages. 7. Evaluate the evaluation projects. At present they tend to be overly critical.

WILDLIFE--MANAGEMENT--HARVESTS AND HUNTING

Anonymous. OFFICIAL 1954 GAME KILL. Pa. Game News 26(4): 44-45, 64. April 1955.
Kills of all types of game in Pa. are tabulated for 1953 and 1954 on page 64. Data for deer and bear are broken down by counties on pages 44-45. Total 1954 kill of deer was 40,925, up about 3,000 from year before. Kill of bear was 403, up 100 from year before.

Anonymous. VIRGINIA'S DEER, BEAR AND TURKEY KILL FOR 1954-55. Va. Wildl. 16(4): 12. Apr. 1955.
Kill by counties, 1952-55. Totals in 1955 were: deer 14,068, bear 270, turkey 2,027. Deer kill was up substantially and was double that of 5 years ago. Western part of state was open to antlerless deer shooting on last day of season and about 2000 antlerless deer were shot. Bear and turkey kill was down, probably because of local conditions such as weather during hunt.

Dunn, Duncan M. (Game Breeder's Assn. of N. J.) THE FUTURE OF HUNTING IN THE NORTHEAST. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 3 p.
State and federal agencies haven't funds to supply all the hunting land and all the game that hunters want. The average hunter cannot afford prices of commercial reserves. Farmers cannot be expected to permit unlimited free hunting. "My plan, basically, is to consider each farm or individual land owner as a preserve unit. Enact laws which will enable him to operate as a small commercial preserve; to be able to charge hunters for the privilege of hunting on his land and to be able to furnish them good hunting for their money." Commercial breeders would produce birds for the landowners to release for hunters. State game farms would operate more as experiment stations than production units, but they would produce birds for public hunting grounds. Public hunting grounds should charge enough to pay their way. Put-and-take stocking should be financed by those who take advantage of it, not by ordinary license buyers.

Herman, John C. (Pa. Game Comm.) MAINTAINING PUBLIC HUNTING IN PENNSYLVANIA. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 5 p.
What Pa. is doing to increase hunting space by purchase, leasing, and reduction of posting.

WILDLIFE--MANAGEMENT--FARM

Casebeer, Robert L. (Idaho Game Dept.) A PLACE FOR WILDLIFE ON THE FARM. Soil Cons. 20(9): 210-214, illus. April 1955.
How and why the Idaho State Fish & Game Dept. works with soil conservation technicians and districts to get habitat improvements on private lands, and what the benefits have been.

Lloyd, Charles H., and Gail W. Eley. (U. S. Soil Cons. Serv.) MULTIFLORA ROSE ERADICATION. J. Soil & Water Cons. 10(2): 78-80, 99, illus. Mar. 1955.
Multiflora may spread objectionably to fence rows, idle or unmanaged land, and some unmowable pastures. This paper reports research with herbicides. "Recommendations. Brush Killer, made up of Isopropyl esters of 2,4,5T and 2,4,D (13 per cent and 27 per cent, respectively), is recommended as a dormant or foliage spray in the eradication of multiflora rose as follows: Dormant spray--1 part Brush Killer to 25 or 30 parts kerosene or fuel oil. Foliage spray--1 part Brush Killer to 100 or 125 parts water and 5 gallons fuel oil."

Schrader, Walter. (S. C. Wildl. Resources Dept.) MULTIFLORA AS WILDLIFE HELP. S. C. Wildl. 2(1): 11, illus. Winter 1955.
"The Department has carried on experiments with multiflora rose for several years and our advice is to think and plan carefully before making a planting." "Multiflora...can be a worry forever, unless properly started and thoroughly controlled." It does make an attractive, economical fence and provides splendid cover for small animals. But it can be hard to eradicate or control. Herbicides will kill it, but eradication by mechanical means is very difficult. It is far from easy to establish a good hedge on poor soil; heavy applications of fertilizer are important. Since the rose spreads by tip layering, it is of utmost importance that a high state of maintenance be carried on directly adjacent to both sides of the hedge.

WILDLIFE--MANAGEMENT--FOREST AND RANGE

Biswell, H. H., A. M. Schultz, and J. L. Launchbaugh. (U. Calif., Berkeley.) BRUSH CONTROL IN PONDEROSA PINE / TECHNICS OF PRESCRIBED BURNS TO ENCOURAGE GROWTH OF DESIRABLE GAME BROWSE IN SECOND-GROWTH TIMBER. Calif. Agr. 9(1): 3, 14, illus. Jan. 1955.

Describes, on basis of experiments, how to make both broadcast and cleanup burns. The relatively light burns used do little harm to soil or trees, but remove much brush. Sprouting or germination of many palatable plants results.

Bramble, W. C., and W. R. Byrnes. (Pa. St. U.) A COMPARISON OF THE EARLY EFFECTS OF SIX BRUSH CONTROL TECHNIQUES ON PLANT COVER AND GAME USAGE ON A POWER LINE RIGHT-OF-WAY IN CENTRAL PENNSYLVANIA. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 13 p.

Detailed research report on topics mentioned in title. Wildlife use of sprayed plots was less than that of unsprayed plots, but seemed to be increasing.

Bramble, W. C., and W. R. Byrnes. (Pa. St. U.) EFFECT OF CERTAIN COMMON BRUSH CONTROL TECHNIQUES AND MATERIALS ON GAME FOOD AND COVER ON A POWER LINE RIGHT-OF-WAY NO. 1. Pa. St. U., Agr. Exp. Sta., Prog. Rep. no. 126. 4 p., illus. Jan. 1955.

Summary: "A replicated series of treatments have been set up on a 3-mile section of a power line right-of-way designed to compare the effects of the spray application on game food and cover of an upland oak-hickory forest cover type. These treatments include a summer foliage spray with 2,4D + 2,4,5T, a foliage spray with Ammate, a summer basal spray with D + T in oil and in oil-water carriers, and a selective winter basal spray with 2,4,5T. A uniform plant community has been described covering the right-of-way at the time of spraying. All sprays caused a foliage kill of from 80 to 100 per cent, but stem kill varied. The highest per cent of stem kill was obtained from the summer and winter basal sprays with the highest number of seedlings and single sprouts being missed in the winter application."

Derr, Harold J., and Floyd M. Cossitt. (US Forest Serv., New Orleans 13, La.) LONGLEAF PINE DIRECT SEEDING. J. Forestry 53(4): 243-246, illus. Apr. 1955.

Includes discussion of bird predation on seed and suggests that early seeding is best way now known to reduce this source of loss. Confirms statements that rodents are not a problem in seeding longleaf pine.

Hill, Ralph R. (US Forest Serv., Denver, Colo.) WILDLIFE MANAGEMENT IN RELATION TO MULTIPLE USE. J. Forestry 53(3): 180-182. Mar. 1955.

Summary: "Public thinking has been slow to accept changing needs of wildlife management. Obsolete measures persist to hinder reaching new objectives. To avoid pitfalls for future administrators we would do well to examine current educational emphasis critically. The two statements (1) good forestry is good for wildlife, and (2) wildlife must be a by-product of some other major use of land, while true in a general way, obscure the fact that much can be done, and needs doing, if wildlife is to maintain an important place in outdoor recreation."

Hogan, R. R. HOME TOWN CONSERVATIONISTS. Ariz. Wildl. Sportsman 26(3): 32-35, illus. Mar. 1955.

Includes description and drawing of improved gallinaceous guzzler that has pit to catch debris before it enters guzzler. Cost of materials for guzzler, including fencing, was $200. Concrete was used for apron and tank.

Richter, Wilmer C. (Pa. Game Comm.) RIGHT-OF-WAY DEVELOPMENT FOR WILDLIFE. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 10 p.

The Pa. Game Comm. experimentally undertook to improve for wildlife a 2.3-mile strip of 30' wide pipe-line right-of-way in mountains of Clinton, Co. Soils were rocky and of moderate to low fertility. The strip was disked, limed, fertilized, and seeded. Costs averaged $75 per acre (total acreage was 8.5). Results are reported for each of 38 varieties of plants seeded. Several kinds, especially legumes, did very well. Wildlife use of plantings is itemized.

WILDLIFE--MANAGEMENT--FOREST AND RANGE--Continued

Valleala, Einari. EFFECT OF SILVICULTURAL MEASURES ON THE WELL-BEING OF GAME. Suomen Riista 9: 111-123, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)

"The article discusses the effects of silviculture on the environment and well-being of game. Earlier investigations indicated that fresh forest soils (Myrtillus type, MT, and Oxalis-Myrtillus type, OMT) and spruce-dominated fertile peat-moors (swampy forestlands, KgK and wet peat-moors proper, VK) meet the requirements of different game species in different seasons of the year better than other forest and peat lands..." Silvicultural practices are considered in relation to game. "In conclusion, certain measures to improve the habitat conditions and well-being of the game are suggested."

WILDLIFE--MANAGEMENT--WET-LAND

Evans, Thomas R. (195 S. Cleveland Ave., St. Paul 5, Minn.) MINNESOTA WETLANDS--NEGLECTED RESOURCE. Cons. Volunteer 18(103): 7-11, illus. Jan.-Feb. 1955.

Huge acreages of valuable wetlands are being drained. Acquisition is the best solution, but is costly and cannot do the whole job. A good alternative is improvement and management of privately owned wetlands. Minn. has thousands of acres of lands that are too wet or too infertile for crops. They have no surface water and therefore can produce neither waterfowl nor fur animals. Two major development methods are available: (1) Flooding and water level control, (2) level ditching. Examples of such developments are described. Costs and profits are discussed. Privately managed marshes have proved economically sound, especially in Wis., where there are 340 of them.

Grigsby, B. H., C. A. Reimer, and W. A. Cutler. (Mich. St. Coll.) OBSERVATIONS ON THE CONTROL OF CATTAIL, TYPHA SPP. BY CHEMICAL SPRAYS. Mich. St. Coll., Quart. Bul. 37(3): 400-406, illus. Feb. 1955.

Results of 1- and 2-year tests of dalapon (2,2-dichloropropionic acid, sodium salt, 68% acid equivalent) and other herbicides in ditches in s. Mich. Conclusions: "1. An application of 6.8-13.6 pounds dalapon per 100 gallons gave seasonal control of cattail. 2. Addition of 1 pound of 2,4,5-T or silvex increased the rate of kill from all rates of dalapon. 3. Regrowth from dalapon treatments was least where the growth regulators were included. 4. Trial applications of 13.6 pounds of dalapon, with or without 2,4,5-T, are suggested for areas where the growth of cattails is seriously affecting the flow of water through drainage ditches."

Madden, Ellison. (US F&WS, Devils Lake, N. Dak.) NORTH DAKOTA AND WETLANDS. N. Dak. Outdoors 17(8): 16-18, illus. Feb. 1955.

Report on numbers and acreages of wetlands of various types in N. Dak. Each of the 5 types and its major wildlife values are described briefly. A short discussion is given on proper handling of wetlands. The state still has 732,600 wetland areas totaling 1,523,000 acres. Considered of high waterfowl value are 554,000 acres. 653,000 acres are of moderate value, and 316,000 acres are of low value to waterfowl. The report is based on inventory by US F&WS. The classification system is that outlined in Classification of Wetlands of the United States (see WR 74: 47).

Miller, Roland B. MORE ON 2,3-DICHLONE. N. Y. State Cons. 9(4): 30. Feb.-Mar. 1955.

"George P. Fitzgerald and Folke Skoog of Wisconsin University's Department of Botany at Madison, in their paper (reprinted from Sewage and Industrial Wastes, Vol. 26 No. 9, September, 1954) report that 2,3-dichloronaphthoquinone, or 2,3-CNQ (now standardized as dichlone) 'when applied in sufficient concentration (30 to 50 parts per billion) is effective in eliminating even very heavy blooms of blue-green algae. The treatments had no apparent adverse effects on the fish and general biotic conditions in the lake. ...the population of fish and zooplankton was abundant and remained unaffected by the treatments.'" Green algae and higher aquatic plants were not harmed.

WILDLIFE--MANAGEMENT--WET-LAND--Continued

Rose, Earl T. (Iowa Cons. Comm.) BLUE-GREEN ALGAE CONTROL AT STORM LAKE. Proc. Iowa Acad. Sci. 61: 604-614. 1954.
This shallow, fertile Iowa lake had toxic concentrations of blue-green algae in 1952. In 1953, copper sulfate was sprayed on algal concentrations, July-Oct., at rate of 13.3 lbs. per acre of lake. Results were good. Counts of planktonic and bottom organisms are reported, as are experiments on effects of the chemical on small fish and fish-food organisms. Apparently the treatment did not have seriously adverse effects on fish or their food supply.

Spinner, George P. (US F&WS, Boston, Mass.) WILDLIFE-WETLANDS IN THE NORTHEAST / A PROGRESS REPORT. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 16 p., map.
Findings of the wetlands inventory in the NE. Acreages of wetlands in each state are listed both by natural type and wildlife value (high, moderate, low, or negligible).

Steenis, John H., Clark G. Webster, and William R. Nicholson. (Patuxent Refuge, Laurel, Md.) IMPROVEMENT OF MARSHES BY WEED CONTROL. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 7 p.
General discussion of perspectives and techniques in control of marsh weeds, and fairly detailed progress report on control of needlerush (Juncus roemerianus) with varied herbicidal treatments.

WILDLIFE--MANAGEMENT--PREDATION, CROP DAMAGE, AND CONTROL

Leopold, A. Starker. (U. Calif., Berkeley.) THE PREDATOR IN WILDLIFE MANAGEMENT. Sierra Club Bul. 39(6): 34-38. June 1954. [From J. Mamm. 36(1).]

Neff, Johnson A., and Robert T. Mitchell. THE ROPE FIRECRACKER / A DEVICE TO PROTECT CROPS FROM BIRD DAMAGE. US F&WS, Wildl. Leaflet 365. 1-8 p., illus. No date. [Mar. 1955.]
The best way now known to drive birds from sweet corn and other crops is the use of strong firecrackers or small aerial bombs that are set off periodically by a smoldering rope into which their fuses are set. This leaflet brings together all available knowledge about how to assemble and use these devices. It takes up costs, acreages protected, spacing of units, waterproofing, and special racks or stands for field use of the assemblies. It is advisable at times to couple use of these frightening outfits with a little rifle or shotgun work.

WILDLIFE--REPORTS OF ORGANIZATIONS

British Columbia. PROVINCIAL GAME COMMISSION REPORT FOR THE YEAR ENDED DECEMBER 31ST 1953. 1-93 p. 1954.
Reports from the 5 districts give much information about status of various types of game and problems involved. The Game Management Division reports on studies of moose and deer in relation to range condition, makes brief comments on other game, and presents a table summarizing the 1953 harvest of major game species. Results of predator control work are tabulated for 1952 and 1953. Among many tables is one that shows, by species, numbers of pelts of fur animals on which royalty has been collected, 1921-53. Two others list bounties paid in 1953, and game bird liberations, 1953. The campaign for suitable either-sex hunting of cervids is gaining ground and the technique has been applied in some places. Predator control is practiced strongly and applied to many species. Bounties are protested in more than one report, for fraud and ineffectiveness are being discovered. The registered trap-line system has continued to demonstrate its efficiency.

WILDLIFE--REPORTS OF ORGANIZATIONS--Continued

Gabrielson, Ira N. (Wildl. Mgt. Inst.) REPORT TO THE IOWA CONSERVATION COMMISSION BY THE WILDLIFE MANAGEMENT INSTITUTE 1954. Seven page supplement in Iowa Cons. 14(3). Mar. 1955.

The Institute surveyed the Iowa Commission in 1947 and again in 1954. This report contrasts conditions in the 2 periods, reviews present administrative problems, and discusses programs and activities. Weaknesses and strengths of the organization and its work are brought out. An interesting tabulation presents a "rough average" of salaries paid by all states to conservation employees in positions of various levels. Average pay of senior biologists, for example, ranges from $3,600 to $4,200.

Montana. BIENNIAL REPORT OF THE FISH AND GAME COMMISSION FOR MAY 1, 1952--APRIL 30, 1954. 1-108 p., illus. Received Feb. 1955.

Section on game includes: estimated numbers of big game, 1952-53; success of winter ranges managed by state; restriction of grizzlies to strictly wilderness country and disappearance after disturbance; brief summary of results of studies of upland game birds; development of waterfowl areas; economic value of fur trapping (approximately $250,000 per year, 90% of which is derived from beaver, mink, and muskrat); numbers of fur animals caught (by species), 1952-54; beaver management and proposed improvements in it; descriptions of mink and marten studies; status of wolverine; food habits of otter; outlines of projects of Cooperative Wildlife Unit at Mont. St. U.; and game farm production of pheasants and chukars.

New York. CONSERVATION DEPARTMENT FORTY-THIRD ANNUAL REPORT FOR THE YEAR 1953. Legislative Document (1954) no. 47. 1-382 p., illus. 1954.

This thick report covers lands and forests, parks, fish and game, water power, and other matters. The report of the Bureau of Game (p. 203-242) is of particular interest in that it tells of creation of a biometrical project that aids biologists in planning studies and analyzing data. Such statistical services are needed more and more by biological agencies. Report of Bureau of Game also discusses work in management districts; registered muskrat marshes; research on rabbits, deer, waterfowl, habitat improvement, marsh ecology, and upland game birds; water chestnut control; work on management areas; rabies control; fur animal seasons and harvests; and small game seasons. Tables provide data on wildlife nuisance complaints; numbers of pheasant nests and broods reported, 1945-53; beaver pelts tagged, 1946-53; reported bear kill, 1950-53; deer kill, 1953. Game farm production is reported in detail.

North Dakota. ANNUAL REPORT / GAME & FISH DEPARTMENT / JULY 1, 1953 TO JUNE 30, 1954. 1-55 p., illus.

Includes: pheasant status; pheasant sex ratios in 3 areas, 1949-54; status of grouse species and Hungarian partridge; efforts to establish chukars; figures on harvests and breeding populations of waterfowl, by species; status of fur species; pelt harvests, by species, 1947-53; discussion of rabies studies; status and kills of big game animals; and progress of habitat improvement and evaluation projects.

Nova Scotia. REPORT OF THE DEPARTMENT OF LANDS AND FORESTS / FISCAL YEAR ENDING MARCH 31, 1954. 1-65 p., illus. 1954.

Report on game (p. 44-59) includes information on status of game species; fur exported, by species; game farm production; moose kill, 1908-37, and present status of moose. Deer harvests and herd conditions in different regions are discussed at length. Deer kill, 1916-53, is tabulated. The kill has risen very rapidly for many years despite the fact that since 1940 it has been legal to take 2 deer of either sex. In 1953, deer kill was about 43,000 and hunter success was approximately 73%. Nova Scotia's deer data provide an excellent example for those working for liberalized regulations in their own states. Figures are given on bears bountied 1942-53. Numbers of bears bountied rose gradually from 132 in 1942 to 409 in 1947 and declined gradually to 169 in 1953. These figures tend to support the idea mentioned by Toner (see WR 78: 42) for Ontario that bears may fluctuate in abundance or availability over a 10 or 11 year period. However, the high years do not seem to coincide at all well in the 2 provinces.

WILDLIFE--REPORTS OF ORGANIZATIONS--Continued

Oklahoma. BIENNIAL REPORT OF THE...GAME AND FISH DEPARTMENT FOR THE BIENNIUM JULY 1, 1952--JUNE 30, 1954. 1-53 p., illus. 1955.
Provides general information on all activities of department. Management areas are described. Figures are given on quail and pheasants produced at game farm. Federal aid and other projects are discussed briefly.

MAMMALS--GENERAL

Hesse, P. R. THE IDENTIFICATION OF THE SPOOR AND DUNG OF EAST AFRICAN MAMMALS. J. East Africa Nat. Hist. Soc. 22(3): 107-110, illus. Feb. 1954. [From J. Mamm. 36(1).]

Thompson, Seton H. ALASKA FISHERY AND FUR-SEAL INDUSTRIES: 1953. US F&WS, Statistical Digest no. 35. iv + 80 p., illus. 1955. 40¢ from Superintendent of Documents.
Includes much information on harvest of fur seals (total 66,669), sales of pelts, byproducts, fur-seal population studies, status of natives, and improvements on Pribilofs. Sealskins sold during year brought $4,029,111. Attempts to eliminate foxes on St. Paul Island were abondoned as impracticable, partly because foxes traveled to and from island on ice. Foxes became a village nuisance on St. George Island and were destroyed in pen traps. Reindeer herd increased to 57 despite an extremely severe winter in 1952-53.

MAMMALS--FAUNAS AND MANUALS

Metzger, Brice. (1001 S. Cassingham Rd., Bexley, Ohio.) NOTES ON MAMMALS OF PERRY COUNTY, OHIO. J. Mamm. 36(1): 101-105. Feb. 1955.
Natural history and locality notes for 26 species. Other workers may wish to try a control method mentioned: "The farmers of the area have employed a very effective device to keep foxes away from roosting chickens. Since much of the area is fenced with electric fences, a fluorescent tube with a wire soldered to each terminal is hung by one wire from the fence while the other wire is grounded by sticking it into the ground. The constant flashing of the tube is very effective in keeping foxes away."

Miller, Gerrit S., Jr., and Remington Kellogg. LIST OF NORTH AMERICAN RECENT MAMMALS. US Natl. Mus. Bul. 205. xii + 954 p. 1955. $3.50 (paper) from Superintendent of Documents.
This important volume is the long-anticipated revision of Miller's checklist of 1924. It includes all subspecies and higher groups of mammals from Panama northward. Ranges are stated in detail that is unusual in a checklist. Synonymies are given for each form. The type locality of each form is stated, and type localities are listed by state or province in a separate section. The book automatically becomes a standard, indispensable reference, for it provides an almost current summary of the taxonomy and distribution of North American mammals. Two things must be borne in mind, however, when using or judging this book: (1) Deadline for inclusion was Jan. 1, 1953. Hence some important recent proposals are not mentioned. (2) As in the 1924 edition, species and subspecies are treated as they were in the last authoritative revision of the group. Mere opinions of the authors and others are thus given little weight. All of Merriam's bears are listed, for example, although it is likely that no living mammalogist considers most of them valid. In short, the book represents the status of published revisionary work through 1952 rather than representing current beliefs. This is one thoroughly legitimate way to prepare a checklist. If limitations of the method are understood, the book will be found to be of high utility.

MAMMALS--FAUNAS AND MANUALS--Continued

Zim, Herbert S., and Donald F. Hoffmeister. MAMMALS / A GUIDE TO FAMILIAR AMERICAN SPECIES. Simon & Schuster, N. Y. (Golden Nature Guide Series). 1-160 p., illus. 1955. $1.00, paper; $1.95, cloth.

Copiously illustrated in color by James Gordon Irving, this book should have strong appeal for the young people for whom it is primarily intended. All of the better known U. S. mammals are depicted, as are many lesser ones from all parts of the country. Small range maps show present, or past and present distribution. Several family trees give at a glance an idea of approximate relationships. The text is brief, but provides significant information on biology of species treated. These species are, in general, the larger or more conspicuous ones; others, including mice and bats, are treated pretty much by genera. Few people will attempt to use such a deliberately popular book for serious work, so technical criticism is largely unnecessary. A few points, however, may be noted. Black bears do occur in Carolina coastal areas. It is far from true that the grizzly "now lives a protected life." It is questionable that raccoons "make fine pets." Mountain lions are hardly "very rare" in view of numbers killed in control work each year. Mountain goats are fairly common rather than "exceedingly rare" in parts of Washington and Idaho. Few wildlifers will appreciate the unexplained statement that mink sometimes destroy entire muskrat colonies. Some of these statements can be attributed to condensation, and it is only fair to say that most material in the book seems to be accurate and useful.

MAMMALS--COMMUNITIES, NUMBERS, HOME RANGES

Brosset, A. RÉPARTITION ET DENSITÉ ACTUELLE DES CARNIVORES DANS LE DÉPARTEMENT DES DEUX-SÈVRES ET LES RÉGIONS VOISINES. Mammalia 18(2): 216-218. June 1954. [From J. Mamm. 36(1).]

Calhoun, John B. (Natl. Inst. Mental Health, Bethesda 14, Md.) A TECHNIQUE FOR INVESTIGATING THE DISTANCE PARAMETER OF HOME RANGE. J. Mamm. 36(1): 45-52, graphs. Feb. 1955.

Summary: "A technique is described for psychologically increasing distance in a nocturnal photophobic rodent such as the Norway rat. This technique consists of placing a light at the end of an enclosed alley opposite to that which serves as a locus of orientation. The light apparently serves to psychologically increase each unit of distance by a constant amount. Thus, it is possible to investigate behavior with respect to distance in the confines of a 14 foot alley that otherwise would have required an alley several times this length."

Morris, R. F. (Lab. Forest Biol., Fredericton, N. B.) POPULATION STUDIES ON SOME SMALL FOREST MAMMALS IN EASTERN CANADA. J. Mamm. 36(1): 21-35, graphs. Feb. 1955.

Small mammals were trapped on 21 plots in coniferous and mixed woods stands. The red-backed vole was the predominant species; deer mouse, cinereous shrew, and short-tailed shrew were common. Population density was directly related to the amount of protective cover on the forest floor; slash from partial cutting operations was particularly favorable. Kill trapping was employed on 20 of the plots. Live-trapping data obtained each month on one plot were used to adjust the kill-trapping data to comparable population density figures at the period of peak abundance. The corrections involve a number of assumptions, and at least some of these, as the author points out, may not be justified.--L. F. Stickel.

MAMMALS--PARASITES AND DISEASES

Caraway, Chas. T., and Albert E. Hyder. (Tenn. Dept. Public Health.) RABIES, A TENNESSEE PROBLEM. Tenn. Cons. 21(3): 20-22. Mar. 1955.

In the period 1931-40, Tenn. had more human rabies per capita and per unit area than any other state. A table shows numbers of cases positively determined in various mammals, 1951-54. The gray fox is believed to be especially important in rabies, far more so than the red. Control of grays is urged as part of the campaign against rabies.

MAMMALS--PARASITES AND DISEASES--Continued

Emmons, C. W., and others. (Natl. Inst. Health, Bethesda, Md.) HISTOPLASMOSIS / PROVED OCCURRENCE OF INAPPARENT INFECTION IN DOGS, CATS AND OTHER ANIMALS. Am. J. Hygiene 61(1): 40-44. Jan. 1955.
Nineteen kinds of mammals and 6 kinds of birds from Loudoun Co., Va. were tested. The survey ran for 8 years; 4,664 individuals were killed and examined by culture for evidence of histoplasmosis. "Histoplasma capsulatum was isolated from tissues of 145 of 397 dogs, 81 of 449 cats, 75 of 2,149 rats, 3 of 95 opossums, 2 of 18 skunks, 1 of 988 house mice, 1 of 30 foxes, and 1 of 37 woodchucks. With few exceptions the animals did not have clinically apparent histoplasmosis. The dog and cat may serve as effective and easily examined indices of the presence of Histoplasma in a geographic area. H. capsulatum has been isolated repeatedly from soil on 5 farm premises."

Nouvel, J. SPIROCHÉTOSES DES ANIMAUX SAUVAGES. Mammalia 18(1): 112-123. Mar. 1954. [From J. Mamm. 36(1).]

Rausch, Robert, and Everett L. Schiller. (Arctic Health Res. Center, Anchorage, Alaska.) STUDIES ON THE HELMINTH FAUNA OF ALASKA. XXIV. ECHINOCOCCUS SIBIRICENSIS N. SP., FROM ST. LAWRENCE ISLAND. J. Parasit. 40(6): 659-662, illus. Dec. 1954.
From Microtus, Clethrionomys, sledge dogs, and man.

Thomas, Lyell J., and others. ECHINOCOCCOSIS ON ST. LAWRENCE ISLAND, ALASKA. Science 120(3131): 1102-1103. Dec. 31, 1954.
In voles, ground squirrels, foxes, shrews.

Tibbetts, Ted. ECTOPARASITES FROM MAMMALS AT CAMP LEJEUNE, NORTH CAROLINA. J. Econ. Ent. 46(3): 530. June 1953.
Hosts listed for 22 species.

MAMMALS--SHREWS, MOLES, BATS

Dalquest, Walter W. (Midwestern U.) NATURAL HISTORY OF THE VAMPIRE BATS OF EASTERN MEXICO. Am. Midl. Nat. 53(1): 79-87. Jan. 1955.
These bats are amazingly abundant--the author has examined some 10,000--and they prey almost entirely on domestic livestock. Control will be necessary in Mexico, but it will be very difficult, as Dalquest shows. Other matters considered are: handling live vampires safely, distribution, feeding habits, hiding places, and young.

Fowle, C. David, and R. Y. Edwards. (Ont. Dept. Lands & Forests, Toronto.) AN UNUSUAL ABUNDANCE OF SHORT-TAILED SHREWS, BLARINA BREVICAUDA. J. Mamm. 36(1): 36-41. Feb. 1955.
Summary: "During the summer of 1947 short-tailed shrews, Blarina brevicauda (Say), were unusually abundant in Algonquin Park, Ontario. This species constituted 65 per cent of the small mammals trapped as compared to 5 per cent in the previous year. They were frequently observed or found dead and they occurred in unexpected abundance in the diets of some predators. Similar high populations were reported from southern Ontario and in New York State. The data from Algonquin Park suggest that the sudden increase took place between September 1946, and May 22, 1947."

Jones, J. Knox, Jr., and James S. Findley. (U. Kans.) GEOGRAPHIC DISTRIBUTION OF THE SHORT-TAILED SHREW, BLARINA BREVICAUDA, IN THE GREAT PLAINS. Trans. Kans. Acad. Sci. 57(2): 208-211, map. 1954.
Range in region is mapped. Specimens from southern Nebr. southward are referred to B. b. carolinensis. Measurements on which this step is based are presented in table.

MAMMALS--RABBITS AND PIKAS

Cowan, I. McT. (U. of B. C., Vancouver.) THE DISTRIBUTION OF THE PIKAS (OCHOTONA) IN BRITISH COLUMBIA AND ALBERTA. Murrelet 35(2): 19-24, map. May-Aug. 1954.
Two new races are described, taxonomic and variational notes are given for several other races, and ranges of all races in area are mapped.

Friley, Charles E., Jr. (Mich. Dept. Cons.) A STUDY OF COTTONTAIL HABITAT PREFERENCES ON A SOUTHERN MICHIGAN FARMING AREA. Mich. Dept. Cons., Final Rep. Project W-48-R. iii + 19 p. + appendix of 18 unnumbered p. of maps, graphs, and tables. Processed. Mar. 1955.
Author's abstract: "The purpose of this study is to determine habitat preferences exhibited by the cottontail (Sylvilagus floridanus mearnsi) for nesting and resting. The study is based on 193 cottontail rabbit nests and 97 forms found in 1949 and 1953. Preferred habitat types, location with respect to adjacent cover types, frequency of use, and construction of nests and forms as well as the influence of ground slope and territoriality with respect to nesting are discussed. The relation between temperature changes from winter to spring and the initiation of breeding activity is examined. The latter coincides with a 'break' in the weather. Cottontail nesting requirements in southern Michigan include fallow areas of low, herbaceous vegetation and/or scattered brush, south to southeast slopes, and nearby resting and escape cover. Forms are most frequently located in herbaceous vegetation and in areas of scattered brush. Nests are never reused by rabbits and their forms are seldom revisited unless they are located in brushpiles, wirepiles, or some other highly protective situation."

Kilham, Lawrence, and Herbert T. Dalmat. (Natl. Inst. Health, Bethesda, Md.) HOST-VIRUS-MOSQUITO RELATIONSHIPS OF SHOPE FIBROMAS IN COTTONTAIL RABBITS. Am. J. Hygiene 61(1): 45-54, illus. Jan. 1955.
Important paper on transfer and propagation of this disease.

Kline, Paul D., and George O. Hendrickson. (Iowa St. Coll.) AUTUMNAL DECIMATION OF MEARNS COTTONTAIL, DECATUR COUNTY, IOWA, 1952. Proc. Iowa Acad. Sci. 61: 524-527. 1954.
"In summary, the autumnal reduction of an estimated population of 284 Mearns cottontails of September 1, 1952 to 41 by January 1, 1953, was studied on an 185-acre tract of farmland... For 58 detected losses in trap thefts and in the field, the major losses were assigned to red foxes, raccoons, and the great horned owls. Hunters took 10 cottontails. Drought of September and October, early October killing frost, and harvesting operations reduced greatly the food and protective cover values of 79 acres of herbaceous growth. The lessened numbers of mice have caused predators to seek cottontails to a larger than normal extent. The rabbits, seeking food in the 47 acres of picked corn and 10 acres of shocked corn, probably were more frequently and easily preyed on than normally. The protective cover was restricted largely to 49 acres of scattered brushland and undercover of woods." For another review of same study see Madson, WR 79: 18.

Ritchie, J. N., J. R. Hudson, and H. V. Thompson. (Ministry Agr., Tolworth, Surbiton, Surrey, Eng.) MYXOMATOSIS. Vet. Record 66: 796-804, (reprints p. 1-9). Dec. 1954.
Good account of this rabbit disease, with emphasis on transmission, spread, and current status in Britain and other countries. Recent studies of transmission, immunology, and vaccination are described. A highly virulent form of the disease has now appeared in all but 7 counties of England, in 14 counties of Scotland, and in Orkney and Shetland islands. Spread is known to have been speeded by man. Attempts to start epidemics in Tasmania and New Zealand were failures. Only animals known to be affected by this disease are European rabbits, except, possibly, a very few European hares. Inoculation with Shope's fibroma virus gave serviceable immunity to 88.9% of domestic rabbits treated.

MAMMALS--RABBITS AND PIKAS--Continued

Seiskari, Pertti. HARES AND REPELLENTS. Suomen Riista 9: 39-40, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
"...a series of experiments was arranged with the 'Karko' repellent to keep field hare and snow hare out of gardens. It proved best to fasten rags soaked in the preparation 0.5-2.0 meters apart on paper string hung around the feeding places some 20-30 cm. above the snow surface. The repellent could be guaranteed to keep the hares off for a minimum of 2 weeks, after which the rags required re-soaking. The loss of strength of the offensive smell is due to evaporation. No difference could be observed in the reaction of field hare and snow hare to the repellent." Composition of Karko is not stated in abstract.

Seiskari, Pertti. WINTER FOOD OF THE SNOW HARE [IN FINLAND]. Suomen Riista 9: 181-182, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)

Tomkins, Ivan R. (1231 E. 50th St., Savannah, Ga.) THE DISTRIBUTION OF THE MARSH RABBIT IN GEORGIA. J. Mamm. 36(1): 144-145. Feb. 1955.
Discussion of habitat and abundance in brackish coastal marshes.

Watson, J. S., and R. H. Taylor. (DSIR, Wellington, N. Z.) REINGESTION IN THE HARE LEPUS EUROPAEUS PAL. Science 121 (3139): 314. Feb. 25, 1955.
Reingestion of soft pellets is shown to occur in European hare much as it does in European rabbit. The question arises as to how far reingestion is a feature of the biology of lagomorphs generally. "...no information has been recorded on this aspect of the biology of any of the many American species."

MAMMALS--RODENTS--MISCELLANEOUS

Allen, G. S., I. K. Barber, and Ian Mahood. (U. of B. C., Vancouver.) THE 1951 AERIAL BAITING AND SEEDING PROJECT, ASH RIVER TRACT, MACMILLAN AND BLOEDEL LIMITED. Forestry Chronicle 31(1): 45-59, illus. Mar. 1955.
From authors' abstract: "An area of 738 acres about 20 miles north and west of Port Alberni on Vancouver Island was seeded by helicopter to Douglas fir (½ pound per acre) and western hemlock (1/5 pound per acre) in November 1951. One week earlier this area and a surrounding buffer strip, totalling 1760 acres, had been baited by helicopter using wheat treated with thallous sulphate and '1080'. Baiting was successful and the rodent:trap ratio dropped from 1:4.6 to 1:94.3 as a result. By April the ratio had climbed again to 1:18.7. By the first week of June 1952, a total of about 1400 Douglas fir and 840 hemlock had germinated per acre... The baiting and seeding operation can be considered highly successful." Environmental conditions and results of seeding are discussed in detail.

Arkley, Rodney J., and Herrick C. Brown. THE ORIGIN OF MIMA MOUND (HOG-WALLOW) MICRORELIEF IN THE FAR WESTERN STATES. Proc. Soil Sci. Soc. Am. 18(2): 195-199. April 1954. [From J. Mamm. 36(1).]
"(Pocket gophers)."

Benton, Allen H. (N. Y. St. Coll. for Teachers, Albany.) OBSERVATIONS ON THE LIFE HISTORY OF THE NORTHERN PINE MOUSE. J. Mamm. 36(1): 52-62. Feb. 1955.
Biology of wild and captive Pitymys pinetorum from Ulster Co., N. Y. and review of findings of other workers. Topics include: physical features, signs of presence, habitats, relationships to climate, time of activity, home range, reproduction, mating behavior, growth and development, molts, foods, behavioral traits of individuals, communication, locomotion, digging, animal associates, predators, diseases and parasites.

Doran, David J. (USDA, Beltsville, Md.) A CATALOG OF THE PROTOZOA AND HELMINTHS OF NORTH AMERICAN RODENTS. III. NEMATODA. Am. Midl. Nat. 53(1): 162-175. Jan. 1955.
List of parasites and their known hosts; bibliography of 209 titles.

MAMMALS--RODENTS--MISCELLANEOUS--Continued

Eskridge, Paul S., and Robert H. Udall. (Colo. A & M Coll.) THE EFFECT OF COLD STARVATION UPON CARBOHYDRATE RESERVES IN PEROMYSCUS MANICULATUS. J. Mamm. 36(1): 139-140. Feb. 1955.

James, William B., and Ernest S. Booth. BIOLOGY AND LIFE HISTORY OF THE SAGEBRUSH VOLE. Walla Walla Coll. Publ. of Dept. Biol. Sci. & Biol. Sta. no. 4. 1-20 p., illus. First published July 1952. Revised ed. Jan. 1954. 50¢.
Lagurus curtatus pauperrimus: description, distribution in Wash., importance as host of plague fleas, colonies and runways, food, temperament, sanitation, fighting, gnawing, mating, size and frequency of litters, growth and maturity. M. L. Johnson has said of this paper [in Murrelet 35(2)], "This revised publication has corrected several deficiencies that occurred in the first version and now represents an excellent life history study; it stands out as a standard reference work in this genus of mammal. It is very encouraging to note that a great deal of effort was put forth to produce a revision that is wholly acceptable in its present form."

Neill, Wilfred T., and James M. Boyles. (Ross Allen Rept. Inst., Silver Springs, Fla.) NOTES ON THE FLORIDA PINE MOUSE, PITYMYS PARVULUS HOWELL. J. Mamm. 36(1): 138-139. Feb. 1955.
Habitat, nest, voice, gait, probable abundance and distribution as suggested by runways.

Po-Chedley, Donald S., and Albert R. Shadle. (U. Buffalo.) PELAGE OF THE PORCUPINE, ERETHIZON DORSATUM DORSATUM. J. Mamm. 36(1): 84-95, illus. Feb. 1955.
Structure, distribution, function, and molt of hairs and quills.

Quay, W. B. (U. Mich.) THE DORSAL HOLOCRINE SKIN GLAND OF THE KANGAROO RAT (DIPODOMYS). Anat. Record 119(2): 161-176. June 1954. [From J. Mamm. 36(1).]

Russell, Robert J., and Rollin H. Baker. (U. Kans.) GEOGRAPHIC VARIATION IN THE POCKET GOPHER, CRATOGEOMYS CASTANOPS, IN COAHUILA, MEXICO. U. Kans Publ., Mus. Nat. Hist., 7(12): 591-608, map. Mar. 1955.
Eleven subspecies, 4 of them new, are recognized.

Shadle, Albert R. (U. Buffalo.) EFFECTS OF PORCUPINE QUILLS IN HUMANS. Am. Nat. 89(844): 47-49. Jan.-Feb. 1955.
First hand account of many quillings. Pain is less than often stated. Splinters of wood are more troublesome than quills. Infection from quills has been rare with author. Quills should be removed with a straight jerk. Quills are most troublesome at tips or joints of fingers. Tips of quills left in flesh can cause persistent difficulty.

Wetzel, Ralph M. (U. Conn.) SPECIATION AND DISPERSAL OF THE SOUTHERN BOG LEMMING, SYNAPTOMYS COOPERI (BAIRD). J. Mamm. 36(1): 1-20, map & graphs. Feb. 1955.
Taxonomic study that treats characters, variational clines, and post-glacial dispersal of the 5 races recognized.

Wildhagen, Aage. ON THE REPRODUCTION OF VOLES AND LEMMING IN NORWAY. Statens Viltundersøkelser. 61 p. 1953. [From Polar Record 7 (49).]
"Laboratory examination of large number of specimens, chiefly Clethrionomys glareolus, Microtus oeconomus and Lemmus lemmus."

Williams, Olwen. (U. Colo.) HOME RANGE OF PEROMYSCUS MANICULATUS RUFINUS IN A COLORADO PONDEROSA PINE COMMUNITY. J. Mamm. 36(1): 42-45. Feb. 1955.
Live trapping was done for nearly 7 weeks in an expanding quadrat. Traps that caught mice were closed so mice would be free to visit other traps and thus reveal more of their ranges. Range was estimated from peripheral traps a mouse visited. Ranges thus calculated for 3 and 4 captures per mouse were fractions of an acre in size, not large as might have been expected. Ranges of both males and females overlapped broadly although study was made during breeding season. Snap trapping done after live trapping caught few of the same animals.

MAMMALS--RODENTS--MISCELLANEOUS--Continued

Wood, John E. (Texas A & M Coll.) NOTES ON YOUNG POCKET GOPHERS. J. Mamm. 36(1): 143-144. Feb. 1955.
Describes broods of 3 ages of Geomys breviceps brazensis from Brazos Co., Texas. Nests and behavior are mentioned briefly.

MAMMALS--RATTUS AND MUS

Barnett, S. A. (Univ., Glasgow, Scotland.) COMPETITION AMONG WILD RATS. Nature 175(4446): 126-127. Jan. 15, 1955.
Wild rats were marked and kept in cages of about 1 cu. m. with attached nest boxes. Groups of adult males of R. norvegicus and R. rattus lived together without mortality up to 22 weeks. This occurred if all were introduced at same time. Males introduced later often were persecuted, and some were killed. Females of both species lived together without conflict. Non-parturient females differed from males in not showing territorial behavior. Males fought each other if females were present. In one trial, only the heaviest of 6 males survived after 11 weeks. Females became pregnant readily, but loss of young was high. Injuries from fights were superficial; deaths resulted from exhaustion or physiological changes. Adrenal cortex showed stress condition in subordinate males involved in severe fighting for short periods. Cortex tended to hypertrophy after long, moderate competition. Most experimental males lost weight. Those that grew most tended to be those that were heavier to begin with. Some of these grew more than the controls did.

Brown, Robert Z., William Sallow, David E. Davis, and William G. Cochran. (Colo. Coll.) THE RAT POPULATION OF BALTIMORE, 1952. Am. J. Hygiene 61(1): 89-102, maps. Jan. 1955.
Gives details on how survey was made and suggests improvements in techniques. Estimate for 1952 was around 110,000 rats as opposed to 78,000 in 1949. Increase is attributed to degeneration of rehabilitated areas.

MAMMALS--SCIURIDS

Anthony, Adam. (Pa. St. U.) BEHAVIOR PATTERNS IN A LABORATORY COLONY OF PRAIRIE DOGS, CYNOMYS LUDOVICIANUS. J. Mamm. 36(1): 69-78, illus. Feb. 1955.
About 250 individuals were observed for more than 4 years. Subjects considered include: vocalization; mouth contacts and grooming; huddling; burrowing; reproductive activity; hibernation; effects of light, temperature, sex hormones; feeding order; assimilation; and dominance. In general, aggression and competition were minimal and cooperative mechanisms were important. In mice, rats, ground squirrels and others, despotism seems to be more important in sociality.

Durrant, Stephen D., and Richard M. Hansen. (U. Utah.) DISTRIBUTION PATTERNS AND PHYLOGENY OF SOME WESTERN GROUND SQUIRRELS. Systematic Zool. 3(2): 82-85, illus. June 1954. [From J. Mamm. 36(1).]

Kilham, Lawrence. (Natl. Inst. Health, Bethesda, Md.) METASTASIZING VIRAL FIBROMAS OF GRAY SQUIRRELS: PATHOGENESIS AND MOSQUITO TRANSMISSION. Am. J. Hygiene 61(1): 55-63, illus. Jan. 1955.

Packard, Robert L. (U. Kans.) NOTES ON THE DEFENSIVE BEHAVIOR OF GRAY AND FOX SQUIRRELS WHILE MOVING THEIR YOUNG. Trans. Kans. Acad. Sci. 57(4): 471-472. 1954.

Ryckman, R. E., C. T. Ames, C. C. Lindt, and R. D. Lee. (School Tropical Medicine, Loma Linda, Calif.) CONTROL OF PLAGUE VECTORS ON THE CALIFORNIA GROUND SQUIRREL BY BURROW DUSTING WITH INSECTICIDES AND THE SEASONAL INCIDENCE OF FLEAS PRESENT. J. Econ. Ent. 47(4): 604-607, graphs. Aug. 1954.
"The investigators believe that these data indicate that aldrin, dieldrin, or heptachlor dusted into burrows over a large area may be expected to keep the flea population below the level of economic importance up to 9 months." DDT was less effective.

MAMMALS--SCIURIDS--Continued

Ryckman, R. E., C. C. Lindt, C. T. Ames, and R. D. Lee. (School Tropical Medicine, Loma Linda, Calif.) SEASONAL INCIDENCE OF FLEAS ON THE CALIFORNIA GROUND SQUIRREL IN ORANGE COUNTY, CALIFORNIA. J. Econ. Ent. 47(6): 1070-1074, graphs. Dec. 1954.

Tevis, Lloyd, Jr. (U. Calif., Davis.) OBSERVATIONS ON CHIPMUNKS AND MANTLED SQUIRRELS IN NORTHEASTERN CALIFORNIA. Am. Midl. Nat. 53(1): 71-78. Jan. 1955.
1,340 individuals were trapped and studied in 1950-51 in connection with forest reseeding research. Species were Citellus lateralis, Eutamias amoenus, E. speciosus, E. townsendii, and E. quadrimaculatus. Main subjects discussed are: sharp, unexplained break in range of quadrimaculatus; time of hibernation and factors affecting it; hibernation fat; reproduction and seasonal changes in sex organs; molts; lack of validity after autumn of skull characters that distinguish adults from subadults; distortion of body weights by stomach contents (stomach may equal up to 29% of gross weight); health and fleas; seasonal changes in numbers.

Uhlig, Hans G. (W. Va. Cons. Comm.) USE OF THE BREEDING SEASON CURVE IN GRAY SQUIRREL INVESTIGATIONS. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 6 p., graph.
Much biological evidence is given that "fall" litters are born mostly in July. Statements that a breeding season peak falls in Aug. or Sept. are based on lactating females and are misleading. Peak of lactation occurs 4-6 weeks after most litters have been born. Thus peak of lactation comes when 60-75% of juveniles are at least 6 weeks old. This means that an early hunting season would not cause a great loss of nestlings. The author's objection to an early season is that in W. Va. maximum populations are not available to hunting until after Oct. 15 in 4 out of 5 years. States with early seasons may have only 30% of bag comprised of juveniles. W. Va. averages twice that proportion when season opens Oct. 15.

MAMMALS--BEAVER

Osborn, Dale J. (Boston U.) TECHNIQUES OF SEXING BEAVER, CASTOR CANADENSIS. J. Mamm. 141-142. Feb. 1955.
Various techniques for sexing beavers of all ages are discussed. The system recommended is gentle, external palpation for testes and baculum. Instructions are given.

MAMMALS--MUSKRAT AND NUTRIA

Alexander, Maurice M. (St. U. of N. Y., Syracuse.) VARIATIONS IN WINTER MUSKRAT HABITATS AND HARVESTS. Am. Midl. Nat. 53(1): 61-70, illus. Jan. 1955.
Based largely on study of 3,779 muskrats taken in 1948 from Montezuma Natl. Refuge, N. Y. Muskrat data are correlated with habitat types. As season progressed, percentages of males and adults increased, while average weights decreased slightly or remained fairly stable. Males averaged 3 oz. heavier than females, measured 0.1 in. longer, were a little fatter, and had slightly larger skulls. No difference appeared in tail size or foot length. Adults averaged 10.6 oz. heavier than subadults, measured 1.8 in. longer, had 0.7 in. longer and 1/16 in. wider tails, and were fatter. Adults were represented by somewhat lower percentage of males. Skulls of adults averaged 4.4 mm. longer and 3.4 mm. wider than those of subadults. Hind feet had same average length in adults and subadults. "The older or more advanced the ecological development of the habitat toward optimum muskrat condition, the heavier and larger the muskrats produced. However, the length of the hind foot was the same for all habitats. The older habitats produced a greater percentage of adults."

Gilford, James H. (Johns Hopkins School of Hygiene.) A SURVEY OF MUSKRAT HELMINTHS IN ILLINOIS. J. Parasit. 40(6): 702-703. Dec. 1954.
Report on 14 species of worms found in 250 muskrats.

MAMMALS--MUSKRAT AND NUTRIA--Continued

Nélis, P., and others. ESSAIS DE DESTRUCTION DES RATS MUSQUÉS PAR DES TECHNIQUES BACTÉRIOLOGIQUES. Parasitica 8(2): 58-63. 1952. [From J. Mamm. 36(1).]

MAMMALS--FURBEARERS--GENERAL

Gale, Larry R. (Ky. Dept. Wildl. Resources.) 1953-54 FUR HARVEST SHOWS SHARP DECLINE. Ky. Happy Hunting Ground 11(2): 28, illus. Mar. 1955.
Size of catch and numbers of trappers and buyers dropped sharply in Ky. Figures from fur buyers' reports are given, by species, on numbers caught and their pelt values. A greater catch of carnivores would be desirable. Bounties have been suggested as a remedy. But bounties are hard to administer, encourage fraud, and have never been effective in fox control. Predators increase or decrease regardless of bounties. For example, foxes are low in Ky. despite small catches in recent years. Even if predators could be substantially reduced by bounties, the effect on game would be doubtful. "Our rabbit populations increased when foxes were abundant, but rabbits began to decline last year and this year in some sections, although foxes were less numerous than before." Probably the best solution is an extension trapper system.

Rawley, Edwin V. (Utah Game Dept.) WHAT IS THE FUTURE OF UTAH'S FUR RESOURCES? Utah Fish & Game Bul. 11(5): 2, 6-7, graphs. Feb. 1955.
Sketches general population status and legal status of Utah fur species and discusses recent harvests of beaver. Available data are given on numbers of trappers, numbers of pelts harvested, and pelt prices for beaver, muskrat, and mink, 1946-54.

MAMMALS--BEARS

Bagley, Lester. (Wyo. Game Comm.) BEAR FOR THE FUTURE? Wyo. Wild Life 19 (2): 2. Feb. 1955.
"There are an estimated fifty grizzly bear left in Wyoming. Present laws and regulations permit approximately 85,000 persons each year to hunt for these animals--1,700 possible hunters for each grizzly as compared to a possible 74 hunters for each one of our 1,120 black bear. In addition to sport hunters, bear on livestock range are confronted by the effective baits and rifles of professional predator control men. Even in National Parks bears do not enjoy complete protection. In these areas they must either be docile enough to get along with thousands of sight-seers from cities or else face deportation or death before the firing squad. Reports indicate that grizzlies are not doing well under these circumstances. The past four years have seen our grizzly population cut almost in half. In five years black bear numbers have been reduced almost fifty percent. We must soon decide whether we wish to exterminate bear because of their role as possible and actual livestock predators or whether we wish to manage them in select areas in controlled numbers as a native game animal worth preserving. Another year or two of indecision and there will be no decision left to make." Copied completely.

Couturier, Marcel A. J. L'OURS BRUN, URSUS ARCTOS L. Marcel Couturier, 45, Rue Thiers, Grenoble, Isere, France. xi + 905 p., 49 figs., 82 pls. 1954. Price (in one vol.) 8,300 francs (about $24.00); (in 2 vols., special paper), 15,300 francs. [From review by W. R. Eadie, J. Mamm. 36(1).]
According to Dr. Eadie's long review, Dr. Couturier spent 15 years preparing this book. He covers in it almost every conceivable aspect of the biology of brown and grizzly bears. All of these bears are considered simply Ursus arctos, a widely distributed, highly variable, ecologically plastic species in which subspecies should not be recognized. The book goes deeply into natural history, ecology, hunting, and conservation. The table of contents occupies nearly 18 pages. Treatment is exceptionally thorough and detailed. Illustrations are excellent. Among the many topics taken up are: tooth succession and wear;

MAMMALS--BEARS--Continued

parasites; diseases; distribution; fossils; influence of brown bear on mythology, history, art, literature, and science; environment; territory; density; temperament; physique; senses; locomotion; food; social life; activity; winter sleep; travels; enemies; captives; and injurious habits. Hunting regulations of all countries are presented, and details are given on bear reserves and national parks where these bears occur. The book has a bibliography of 70 pages. "L'OURS BRUN will stand for a long time to come as a definitive work on the brown bear. It will serve as an almost inexhaustible summary of what is known about these magnificant mammals..."

Svihla, Arthur, Howard Bowman, and Roger Pearson. (U. Wash.) BLOOD PICTURE OF THE AMERICAN BLACK BEAR, URSUS AMERICANUS. J. Mamm. 36(1): 134-135. Feb. 1955.

MAMMALS--RACCOON AND RINGTAIL

Nelson, Frank P. (S. C. Wildl. Resources Dept.) THE PLACE OF STOCKING IN GAME MANAGEMENT. S. C. Wildl. 2(1): 2-3, illus. Winter 1955.

Raccoons are trapped in eastern S. C., where considered predators, and released in western part, where desired as game. During 1950-54, 789 coons were ear-tagged and so transplanted. Only 14 tags have been reported, 2 of them without data. The other 12 indicate travels of 0-180 (av. 53) miles by these transported animals. Only 2 of the 12 coons had remained near where released. "This indicates that restocking raccoons in the upper Piedmont, while not being a total loss, is not too effective." Better results have been obtained in stocking deer and turkeys, as shown by data from several management areas in S. C.

Price, Donald L. (Army Med. Center, Wash., D. C.) DIPETALONEMA PROCYONIS N. SP. FROM PROCYON LOTOR LOTOR (LINNAEUS). Proc. Helminth. Soc. Wash. 22(1): 38-41, illus. Jan. 1955.

New filarial nematode from subcutaneous connective tissue; Md.

MAMMALS--MUSTELIDS

Hamilton, W. J., Jr., and Arthur H. Cook. (Cornell U.) THE BIOLOGY AND MANAGEMENT OF THE FISHER IN NEW YORK. N. Y. Fish & Game J. 2(1): 13-35, map. Jan. 1955.

Important paper that deals with present status in N. Y., pelt prices, populations, measurements, weights, sex ratios, activity, cruising range, foods, predation on porcupine, predation on raccoon, predation on deer, reproduction, endoparasites, and management. Fishers have increased greatly in the Adirondack region, thanks in part to regrowth of forests and closed seasons 1936-48. Population density is about 1 fisher per square mile. Fishers apparently hunt over areas of about 10 square miles. Males range more widely than females. Beechnuts and other plant foods are eaten, but main fall-winter foods are deer (chiefly carrion) and various small and medium sized mammals. Blastocysts flushed from uterine horns numbered 1-4. Several kinds of parasitic worms were found, but none seemed seriously harmful. Present trapping regulations are satisfactory. Pelt tagging gives information on population trends and should be continued. It is suggested that fishers might be live-trapped and released in suitable habitats in the Catskill Mtns., where the species does not now occur.

Hogue, Jack E. (Colo. Dept. Game.) BADGER. Colo. Cons. 4(2): 28-29, illus. Mar.-Apr. 1955.

A short popular article that includes some original information derived from studies in Colo. Range is throughout state, from lower elevations to alpine areas. Badgers are active both day and night. They "hibernate" only for short periods, even in below-zero temperatures and deep snow, and do not do so at all in warmer parts of state. There is no instance of a badger killing a lamb in the open. Every instance of lamb killing has occurred when lambs got trapped in

MAMMALS--MUSTELIDS--Continued

holes. Few badgers are now trapped for pelts, and the population in Colo. has become large in the past few years. The following breeding data were obtained from captives. Females may become sexually mature at age of 4 months. Badgers of either sex may live 14-15 years. Mating is in Sept., especially the latter half. Young are born in May, so gestation period is 7½-8 months. Fully mature females bear more young than do young females. Usual litter size is 2, but larger litters are not rare. Monogamy is the rule, but replacement takes place when necessary.

Jones, Wesley R. (US F&WS, Westboro, Mass.) SKUNK CONTROL IS YOUR BUSINESS. Pest Control 23(2): 23-24, 36, illus. Feb. 1954.
Habits of skunks, trapping in live or steel traps, repellents, methods of exclusion, removing odor of scent from houses and clothing. For removal of odor, Neutroleum Alpha is recommended.

Lancum, F. Howard. BADGERS' YEAR. Crosby Lockwood & Son, London. 72 p., illus. 1954? 6s. 6d. [From review by "M.C.M." in Ann. & Mag. Nat. Hist., Nov. 1954.]
"This book is the outcome of an all-the-year round study of a specific family of badgers, and Mr. Lancum must be congratulated on the result of his vigilance and patience... The story is pleasingly and lucidly told and throws much new light on the habits and life-history of a greatly misunderstood animal. The photographs...are very fine and enable the reader to grasp details that would otherwise have been missed... The author is well recognized as an authority on the economic status of the badger and he here presents some striking evidence in connection with this animal."

Stenlund, Milton H. (Minn. Div. Game, St. Paul.) A RECENT RECORD OF THE MARTEN IN MINNESOTA. J. Mamm. 36(1): 133. Feb. 1955.

Teplov, V. P. OTTER IN THE REGION OF THE PECHERO-ILYCHSKIY NATURE RESERVE. Bul. Moscow Soc. Nat., New Series, Biol. Sect., 58(6): 7-16. 1953. [From Polar Record 7(49).]
"Numbers, distribution, behavior, food, and relations with other animals of Lutra lutra lutra L." In Russian.

MAMMALS--DOGS, WOLVES, FOXES

Fichter, Edson, George Schildman, and J. Henry Sather. (Idaho St. Coll.) SOME FEEDING PATTERNS OF COYOTES IN NEBRASKA. Ecol. Monog. 25(1): 1-37, illus. Jan. 1955.
An exceptionally detailed, ecologically oriented account of coyote foods as determined from 2,500 scats and 747 stomachs. Foods are discussed in relation to region of state, season of year, and, insofar as possible, availability. Small and medium sized wild mammals were main sustenance. Cottontails increased in one area after coyotes were thinned out. A seeming abundance of kangaroo rats in one area was not reflected in coyote scats. Large numbers of meadow mice and pocket gophers were taken. Consumption of muskrats apparently correlated with disease in muskrats. Consumption of deer was considerable only when a hard winter provided many weakened or dead deer. Predation on small birds was considered largely accidental. Pheasants were an important food in 2 regions; interestingly, predation on pheasants did not increase during nesting season. Grouse were not important in diet except during the unusually hard winter. Insects were important foods in summer. Much fruit was eaten in summer and fall. The authors draw no conclusions about effects of coyote predation on any prey species, and point out the types of evidence that are necessary before such conclusions can be drawn.

Oksala, Tarvo. GENETICS OF THE DARK PHASES OF THE RED FOX IN EXPERIMENT AND IN NATURE. Papers on Game Res. 11. 1-16 p., illus. 1954.

MAMMALS--DOGS, WOLVES, FOXES--Continued

Oksala, Tarvo. ON THE SAMSON CHARACTER OF THE RED FOX. Papers on Game Res. 11. 17-23 p., illus. 1954.
Study of inheritance (a variably expressed recessive) and past and present occurrence in the wild in Finland.

Sullivan, Edward G. BREEDING, DENNING AND RANGE OF ACTIVITY OF FOXES IN ALABAMA. M. S. thesis, Ala. Polytechnic Inst. Dec. 1953.

Turcotte, W. H. (Miss. Game Comm.) WHAT DOES A FOX EAT? Miss. Game & Fish 18(8): 3, graph. Mar. 1955.
Discussion of food habits in Miss., 1946-48, of foxes taken from refuges and elsewhere. Seasonal changes in diet reflect availability. On year 'round basis, insects and plant materials were most important foods. Rabbits and small rodents were also important. Quail remains were found only 3 times (once certainly as carrion) in 258 samples. Other foods are also discussed.

MAMMALS--CATS

Davis, James Richard. FOOD HABITS OF THE BOBCAT IN ALABAMA. M. S. thesis, Ala. Polytechnic Inst. xi + 79 p., illus. Processed. Mar. 1955. [Produced in limited numbers for deposit only in libraries of major schools offering training in game management.]
Review of literature and detailed report on contents of 239 stomachs. Main food by far was rabbit (63.2% by occurrence). Other important foods were cotton rat (11.3%), deer (10.5%), squirrel (9.2%), and Peromyscus (5.4%). Deer were eaten mostly during and soon after hunting season, when dead or wounded animals would be available. Few fawns were eaten. Turkey was found in only 1 stomach. Insofar as possible, foods taken by bobcats at different times and places are discussed in connection with prevailing game populations.

Erickson, Albert W. (Cusino Wildl. Exp. Sta., Shingleton, Mich.) A RECENT RECORD OF LYNX IN MICHIGAN. J. Mamm. 36(1): 132-133. Feb. 1955.

Lambert, Harold. (W. Va. Cons. Comm.) THERE AIN'T NO 'PAINTERS' IN WEST VIRGINIA. W. Va. Cons. 19(1): 10-12, illus. Mar. 1955.
Despite all furor to the contrary, the state's wildlife experts are convinced there are no pumas in W. Va.

Siivonen, Lauri. THE LYNX POPULATIONS ARE RETREATING. Suomen Riista 9: 184, maps. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Finnish lynx population rose 10-15 years ago, came to a standstill in middle 1940's, and has declined since. Today it is doubtful that the lynx even breeds in Finland.

Stough, Betty Dolores. LYNXRUFUS WILSONI N.G., N. SP. (NEMATODA: METASTRONGYLIDAE) FROM THE LUNGS OF THE BOBCAT, LYNX RUFUS RUFUS (SCHREBER). Ph. D. thesis, Va. Polytechnic Inst. 34 p. 1953. [From abstract in Dissertation Abstracts 15(1).]

MAMMALS--BIG GAME--GENERAL

Anonymous. WYOMING'S BIG GAME HARVEST LEVELS OFF. Wyoming Wildlife 19(3): 4-15, illus. Mar. 1955.
The 1954 kill was highest of recent years, but only by a small margin. The leveling off indicated in last 2 years is now evident. "During the 1954 season a total of 92,285 big game animals were bagged... Hunters harvested 50,547 deer, 30,776 antelope, 10,189 elk, 513 moose, 47 mountain sheep and 213 bear. This season's very heavy deer kill more than offsets the drop in antelope harvest." It was necessary to extend the season in more than 20 deer areas, and in some of these 2 deer were permitted. Tables provide figures on hunting statistics, yield of meat by weight, desired and actual kills, harvests (by species) 1945-54, and kill of each species by management units.

MAMMALS--HOOFED (Except deer)

Gaab, Joe E. (Mont. Game Dept.) THOSE "CRAZY" MOUNTAIN GOATS! Mont. Wildl. 5(1): 15-17, illus. Winter 1955.

A good example of successful game management. The Crazy Mtns. of Mont. had fine goat habitat but no goats. Between April 1941 and April 1943, 21 goats were caught in baited corral traps in the Sun River area and released in the Crazy Mtns. They thrived and spread. Many twins and even triplets were born. In the early 1950's, 278 goats (38% kids) were counted. To utilize the herd and keep it producing well, hunting was begun. Thirty permits were issued in 1953 and 50 in 1954. Hunter success was high.

Goldsby, Alice I., and D. F. Eveleth. (Dept. Vet. Sci., U. Wis.) INTERNAL PARASITES IN NORTH DAKOTA ANTELOPE. J. Parasit. 40(6): 637-648, illus. Dec. 1954.

Ninety-seven percent of 95 antelope were parasitized by 6 to 6,614 worms of 9 genera and 15 species. Several new host and state records are reported. Antelope "in ranges grazed by sheep had more abomasal parasites while those on ranges grazed by cattle had more intestinal worms."

McCulloch, Clay Y., Jr. (Box 1114, Roosevelt, Ariz.) BREEDING RECORD OF JAVELINA, TAYASSU ANGULATUS, IN SOUTHERN ARIZONA. J. Mamm. 36(1): 146. Feb. 1955.

Date and brevity of 1 mating; dates on which young javelinas or advanced embryos were seen.

Ogilvie, Stanley. (Colo. Game Dept., Woodland Park, Colo.) CHOKECHERRY TOXIC TO AN ANTELOPE. J. Mamm. 36(1): 146. Feb. 1955.

Gorging on new spring growth of Prunus melanocarpa apparently caused illness of an adult buck.

Rousseau, Jacques. (Jardin Botanique, Montreal.) PROTECTION DU CARIBOU ET ÉLEVAGE DU RENNE AU CANADA. Forêt Conservation 21(2): 12-14. Feb. 1955.

Recommends reserving caribou for native use and setting up sanctuaries for them, and also recommends bringing in reindeer to be cared for and utilized by natives. Methods are discussed. The paper pertains chiefly to northern Quebec and Labrador.

Saunders, Jack K., Jr. (2709 First Ave. N., Great Falls, Mont.) FETUS IN YEARLING COW ELK, CERVUS CANADENSIS. J. Mamm. 36(1): 145. Feb. 1955.

Summarizes past records of the kind and reports a new one.

Swanson, Anton. M IS FOR MOOSE. Vantage Press, N. Y. 64 p. 1954. $2.50. [From review by R. W. Sutton, The Beaver, Winter 1954-55.]

"It becomes obvious as one reads this little book that the author is a capable and observant woodsman; but it also becomes obvious that he is almost totally ignorant of the scientific work that has been done, and is being done, in Canada on the subject he deals with. He discusses at great length the work done in Europe on the European elk. But he leads one to believe that--aside from himself--no one in this country [Canada] has paid the slightest attention to the life history of the moose. Does he know, we wonder, of the work done by Dr. Peterson of the Royal Ontario Museum, or by Dr. Taylor of U. B. C.? ...One is left with a sense of regret that the author has not discussed the moose solely as he himself knows it. For he is evidently on unfamiliar ground when he ventures out of the forest, where he is so much at home, into the realms of science..."

MAMMALS--DEER

Banasiak, Chester F. (Me. Dept. Game.) DOES MAINE NEED A NEW DEER SEASON? Me. Dept. Inland Fish & Game. 1-17 p., mimeo., maps and graphs. Jan. 1955.

Maine has not been cursed with a buck law, but it does have overpopulated areas. Only about 12% of deer yards are in good condition and about 35% are overbrowsed. The situation is worst in n. Maine; there antler beam diameter and reproduction are somewhat less than in s. Maine. Heavier harvests are needed in most parts of state, but especially in the north. The author proposes (1) a new dividing line between n. and s. Maine, (2) a season 6 days earlier and longer in north, (3) a season 10 days later and longer in south. It is thought that these changes will gradually reduce herds to suitable levels and maintain high rate of kill. Tables show yard conditions by counties; sex and age ratios of deer, 1948-53; percentages of fawns in proposed zones, 1948-53; and kill trends in the zones, 1939-53. Similar information is presented in maps and graphs.

Bissell, Harold D., Bruce Harris, Helen Strong, and Frank James. (Calif. Dept. Game.) THE DIGESTIBILITY OF CERTAIN NATURAL AND ARTIFICIAL FOODS EATEN BY DEER IN CALIFORNIA. Calif. Fish & Game 41(1): 57-78, illus. Jan. 1955.

Technical report of digestion trials and chemical tests of alfalfa hay and oats, alfalfa hay and barley, live oak, chamise, bitterbrush, sagebrush, and alfalfa hay. Alfalfa-grain diets were good. Bitterbrush and alfalfa were relished, but were utilized less efficiently and there was weight loss. Sagebrush, live oak, and chamise were not accepted well enough to supply minimum energy requirements; their protein digestibility was low. There was an average intake of 1,999 grams per cwt. per deer per day for the 2 black-tailed deer that had been reared in captivity, and 709 grams per cwt. per day for the 3 mule deer, which had been trapped. A confined, 100-lb. deer digests about 4,500 calories a day, but about 3,360 calories per day go into energy of growth, movement, and rumen fermentation. Water intake varied from 2.7 to 8.2 lbs. per cwt. per day, averaging 5.1. No craving for salt appeared during trials. Results suggest that single-item diets are seldom eaten and of limited value. The only natural food tested that would serve as the sole food for a prolonged time was bitterbrush. Deer ranges should be managed to provide a good variety of palatable species. Emergency feeds should be palatable, concentrated, non-spoiling, and high in total digestible nutrients. Apparently they need not contain added vitamins, minerals, or large amounts of protein.

Brigham, James H. (Wash. Dept. Game.) SUMMER MORTALITY OF JUVENILE BLACK-TAILED DEER IN WESTERN WASHINGTON. Murrelet 35(3): 39-42, graph. Sept.-Dec. 1954.

It was known that the yearly fawn crop on the Clemons Tree Farm was reduced by more than half between time of birth and hunting season. With this in mind, coyote scats were collected May through Sept. 1953. Major results are reported and graphed here. Lepus americanus and Aplodontia rufa were important coyote foods through much of year, but in fall such plant material as berries outranked all other foods. Occurrence of deer in diet was at peak in June, when fawning was also at peak, and dropped greatly after June. It is concluded from this and other evidence that mortality is greatest soon after birth, when fawns are most liable to accident, privation, or predation. Several references that are cited tell of heaviest consumption of cervids by predators during fawning period. An unknown proportion of this consumption must be attributed to feeding on animals killed by factors other than predation.

Brohn, Allen, and Dunbar Robb. (Mo. Cons. Comm.) AGE COMPOSITION, WEIGHTS, AND PHYSICAL CHARACTERISTICS OF MISSOURI'S DEER. Mo. Cons. Comm., P-R Series no. 13. ii + 28 p., map and graphs. Feb. 1955.

Based on 4,529 deer examined during hunting seasons, 1944-51. "Data collected included weight, age, sex, antler development, and, during some seasons, foot length, girth, condition and incidence of lactation." Conclusions: "(1) Deer on fertile, uncrowded ranges are larger, have bigger antlers, and produce more young than deer on less fertile or more crowded ranges. (2) The productivity of Missouri's deer herd is high, amounting to a potential annual increase of at

MAMMALS--DEER--Continued

least 64 per cent. (3) On good range, more than one-third of the doe fawns breed when six months old and bear young at one year - thus further stepping up production. (4) The adult sex ratio of one male to two females, in 1951, indicates that previous buck seasons have not resulted in a badly upset sex ratio. (5) Young deer (fawns, yearlings, and 2½ year-olds) make up the bulk of the legal kill. Other facts brought out by this investigation are that deer are least vulnerable to hunters in the more rugged parts of the Ozarks; that the peak of the breeding season is in early November, and that bucks lose weight rapidly during the rutting season (and therefore provide the hunter with less venison in a December season)." Seventeen tables and 2 graphs.

Dasmann, Raymond F. (Humboldt St. Coll.) ECOLOGY AND SOCIAL BEHAVIOR OF A POPULATION OF THE COLUMBIAN BLACK-TAILED DEER IN CALIFORNIA. Ph. D. thesis, U. Calif. (Berkeley). 155 p. Aug. 1954. [From author's abstract.]

Deer of a study area in Lake Co. were studied intensively, 1951-53. Populations were high in 1951, lower in 1953. Mortality removed 44% of summer population in 1951-52 but was low in next year. Natality was minimal in 1953. Deer occurred in small groups, not in herds. They occupied small home ranges throughout year. [For abstract of author's paper on home range behavior, see WR 77: 34.] Both sexes occasionally traveled beyond their home ranges. "Aggressive behavior, alarm behavior, and play varied with the population density. Friction between deer and alarm flights were more frequent when the density was high and the food supply inadequate. Play was more frequent when the density was low and food abundant." Bucks were relatively gregarious; at most seasons they tolerated presence of other males. Adult does tended to avoid one another and to locate their range centers well apart. Deer tended to feed most in small areas of richer soil. They needed dense, unburned cover for escape, bedding, and fawning. Maintenance of high deer populations in the chaparral will require controlled burning and reseeding on small areas of better soils. Burns should be spaced to allow for the small home ranges, and to leave enough intervening patches of dense cover. [Shortened from author's abstract.]

Detwiler, John S. A SURVEY OF DEER DAMAGE TO CONIFEROUS PLANTINGS IN SELECTED PENNSYLVANIA COUNTIES. M. S. thesis, Pa. State U. 94 p. 1953.

Edminster, Frank C. HUNTING WHITETAILS. Wm. Morrow & Co., N. Y. 16, N. Y. 192 p., illus. 1954. $3.75. [From review by J. J. Shomon, J. Forestry 53(3).]

A sportsman's book, but one that contains much good information on management. It should help bring sportsmen, game men and foresters closer together in their thinking. "There are six chapters in the book. The author describes his own first hunt and goes on to describe deer hunting methods in the second chapter. Three provides miscellaneous information on what to do after the deer is killed--dressing, transporting, care of trophy, and venison recipes. Four is a discussion of equipment for deer hunting and five facts about the whitetail. The final chapter covers deer hunting in America from Indian times to the present."

Garrett, Bill. (Texas Game Comm.) ELECTRIC FENCE REPELS DEER. Texas Game & Fish 13(3): 9, illus. Mar. 1955.

Single strand fence that carries continuous rather than intermittent current. This fence is placed outside field at distance equal to height of main fence of field. Directions are given for materials and installation.

Gilfillan, Merrill C. (Ohio Div. Wildl.) WANTED: MORE DEER HUNTERS. Ohio Cons. Bul. 12-13, graph. Mar. 1955.

Story of expansion of Ohio's deer herd in recent past, future expansion, and harvest policies. Thirty years ago Ohio was not considered a deer state. A few hundred deer were released in s. Ohio, but they did not do very well. Natural spread from the Northeast was vigorous, however, and now there are deer in all parts of state, although few in central and western parts, which are heavily farmed. In 1943, 8,500 hunters killed 168 bucks in the 3 open counties. Ten years later, 30,000 hunters killed 4,000 deer of any age or sex in 40 open counties. The public accepted scientific harvest recommendations with very

MAMMALS--DEER--Continued

little opposition, a development that has occurred in few other states. Ohio's deer were thought to total about 24,000 in 1954. The state can accomodate some 75,000 deer, and may be doing so by 1971. A 20% harvest will be necessary to stabilize the herd. If only 1 hunter in 10 gets a deer, as at present, 150,000 hunters will be needed. Ohio workers found that deer census methods used elsewhere were not satisfactory in Ohio. The population index now used and considered most practicable is based on accidental kills by automobiles.

Harrison, R. P. (Am. Box Board Co.) ASPEN MANAGEMENT: A PARTIAL SOLUTION TO THE DEER PROBLEM. Wis. Cons. Bul. 20(2): 18-22, illus. Feb. 1955. Reprinted from Mich. Out-of-Doors.

Aspen of nearly even age covers more than 3,000,000 acres in northern Lower Michigan. Most of it is mature, ready to be cut. Old and dying, it provides less deer and grouse habitat than it did when younger. Only about 1/3 of aspen acreage is commercially operable. If cut or control-burned, aspen stands produce great quantities of sprouts or seedlings that greatly increase deer food. Figures are given on sprout production after logging or burning. Thinning and cutting directly provide deer food in the form of trimmings. Thus we can have aspen utilization and bigger deer herds. But too many deer can prevent reforestation and create worthless sweet fern barrens that yield neither game nor timber. One solution is to treat areas 5-6 times as large as the local deer can keep browsed down. Herd control is another. Needed is a cooperative management plan for the region; forestry, wildlife, and recreation should be adequately provided for.

Kerns, Chester M. (Md. Game Comm.) DEER KILL 1954. Md. Cons. 32(2): 7-10, illus. Mar. 1955.

Total Md. kill was 1660 as contrasted to 181 ten years before. Data are given on total kills each year since 1931 and on numbers and average weights of deer killed in each county in 1954.

Melander, K. R. ROEDEER AND RED DEER IN FINLAND IN THE 16TH AND 17TH CENTURIES. Suomen Riista 9: 27-38. 1954. (In Finnish. English abstracts on separate, mimeo sheets.)

Occurrence, protection, and hunting are described from study of old records.

Pasto, Jerome K., and D. Woods Thomas. (Pa. St. U.) COSTS AND BENEFITS OF THE POTTER AND MONROE COUNTY DEER HERDS. Pa. Game News 26(2): 4-12, illus. Feb. 1955.

Last of 5 parts. Gives partial review of previous parts, states conclusions, and outlines possible lines of action. On the whole, farmers were worse off because of deer, but few of them wanted to see deer eliminated. Hunters, business men, and society in general were better off because of deer. Some actions that could be taken if public desired them are: 1. Recompense farmers for losses. 2. Let farmers charge for hunting rights. 3. Limit size of herd enough to reduce crop damage. 4. Encourage further state ownership of deer lands. 5. Manage land to produce more deer food. 6. Let things go on as they are. Certain of these approaches are already in use to some extent.

Sanderson, Glen C., and E. B. Speaker. (Iowa Cons. Comm.) RESULTS OF IOWA'S FIRST DEER SEASON IN RECENT YEARS. Proc. Iowa Acad. Sci. 61: 615-630, maps. 1954.

History and distribution of deer in state and data on 1953 season. Estimated kill in the 45 open counties totaled about 4,000. A herd of some 12,000 remained. Sixty-one per cent of hunters bagged 1 or more deer. Other hunting statistics are given. Fawns comprised 27% of the bag. Nearly 3/4 of deer bagged were 2½ years old or younger. Females comprised 46% of deer shot. "Live" weights averaged 71.7 lbs. for female fawns, 148.2 lbs. for males of at least 1½ years, and 130.4 for all deer weighed. Crippling losses were relatively low. It is believed that suitable herd reduction was achieved in some areas but not in others. Hunting pressure may require regional manipulation. Allowing for herd reduction in the limited areas of extensive deer damage, Iowa should be able to harvest 2,000 to 5,000 deer annually.

MAMMALS--MARINE

Angot, Michel. OBSERVATIONS SUR LES MAMMIFÈRES MARINS DE L'ARCHIPEL DE KERGUELEN AVEC UNE ÉTUDE DÉTAILLÉE DE L'ELEPHANT DE MER, MIROUNGA LEONINA (L.). Mammalia 18(1): 1-111, illus. Mar. 1954. [From J. Mamm. 36(1).]

Chippendale, Harry Allen. SAILS AND WHALES: WITH AN INTRODUCTION BY HENRY BEETLE HOUGH. Andrew Melrose, London. 192 p., illus. 1953. 15s. [From Polar Record 7 (49).]
"Autobiography. American Sperm whaling. Includes account of sealing voyage of barque Swallow of Boston (Capt. Benjamin Cleveland) to Îles de Kerguelen, 1897-98."

Mohr, Erna. (Hamburgische Mus., Germany.) DER SEEHUND. Die neue Brehm-Bucherie, Heft 145. A. Ziemsen Verlag, Wittenberg Lutherstadt, Germany. 55 p., 48 figs. 1955. Price not stated.
Popular account of the natural history of the harbor seal Phoca vitulina, with special emphasis on the seal in European waters; brief information on closely related ringed and gray seals.--V. B. Scheffer.

MAMMALS--OTHER GROUPS

Anonymous. THE OPOSSUM. US F&WS, Wildl. Leaflet 359. 2 p., illus. Mar. 1955.
General information about habits and suggestions for control with box traps or steel traps.

Pimentel, David. (US Pub. Health Serv., San Juan, P. R.) BIOLOGY OF THE INDIAN MONGOOSE IN PUERTO RICO. J. Mamm. 36(1): 62-68. Feb. 1955.
Summary: "A biological study was made of the Indian mongoose (Herpestes auropunctatus auropunctatus), an important reservoir and vector of rabies in Puerto Rico. During the progress of the study a total of 398 mongooses were live-trapped; 260 of these were taken into the laboratory and held for various periods of time. Adults were found to weigh slightly more than one pound. Females produce a yearly average of two litters of two pups each. The animal has a home range, varying from 100 to 700 feet in diameter. The mongoose was observed to be diurnal, preferring a habitat of dense grass near small streams, and is carnivorous, preferring fresh meat to carrion. Insects and reptiles are the main foods eaten in the wild. Sun-dried fresh fish was found to be satisfactory bait for the animal. Evidence was obtained that the mongoose is not an effective predator of rats in Puerto Rico."

BIRDS--GENERAL

Barruel, Paul. BIRDS OF THE WORLD. THEIR LIFE AND HABITS. (Translated from French by Phyllis Barclay-Smith.) Oxford U. Press, N. Y. 204 p., illus. 1954. $12.50. [From review by C. R. Mason, Bull. Mass. Aud. Soc. 39(3).]
"At first glance Birds of the World would appear to be just another picture book, although a good one, containing an unusual number of superb photographs... and a beautiful collection of color plates... However, the book...contains brief but interesting and well-written discussions of bird life and habits... A report of daily activities includes rhythm, locomotion, and food. The chapter on reproduction carries one through the annual cycle to the development of the young bird, and includes comments on cuckoos and other parasites. This section discusses some most interesting facts concerning song and call notes, territory and its defense, pair formation, courtship displays, flights and attitude, the nest site and construction of the nest, eggs and their markings, and the habits of the young through their early period of growth. Another chapter contrasts solitary birds with those co-ordinated into groups or flocks. Populations are covered sufficiently to bring out some essential points. In conclusion, bird psychology, with reference to instinct and intelligence, is interestingly discussed and well worth reading." See also WR 76: 57.

BIRDS--GENERAL--Continued

Cott, Hugh B. (U. Cambridge, Eng.) THE PALATABILITY OF THE EGGS OF BIRDS: MAINLY BASED UPON OBSERVATIONS OF AN EGG PANEL. Proc. Zool. Soc. London 124(2): 335-463. Aug. 1954.
This long paper provides much information on edibility of eggs of 212 species of birds of 25 orders. Birds of all sizes and from many parts of the world are represented. Numerical ratings of palatability were assigned by a panel of professional egg tasters. Peculiar flavors or textures were noted. The author also cites the published opinions of numerous other writers. He supplies data on size, weight, color of shell, and color of yolk for most kinds of eggs tested. Results will be discussed with reference to adaptation in another paper.

McAtee, W. L. LONGEVITY OF BIRD NAMES. Names 1: 85-102. 1953. (Reprints available from Am. Name Soc., Univ. Calif. Press, Berkeley 4, Calif., for 10¢) [From Auk 72(1).]
"A well documented article on the history of vernacular names of birds."

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Cade, Tom J. (U. Calif., Los Angeles.) EXPERIMENTS ON WINTER TERRITORIALITY OF THE AMERICAN KESTREL, FALCO SPARVERIUS. Wilson Bul. 67(1): 5-17, illus. Mar. 1955.
Experiments with stuffed and living decoys exposed in the wild demonstrated that territories were well defended in winter.

Farner, Donald S., and L. R. Mewaldt. (St. Coll. Wash.) THE NATURAL TERMINATION OF THE REFRACTORY PERIOD IN THE WHITE-CROWNED SPARROW. Condor 57(2): 112-116. Mar.-Apr. 1955.

Hudson, George E., and Patricia J. Lanzillotti. (St. Coll. Wash.) GROSS ANATOMY OF THE WING MUSCLES IN THE FAMILY CORVIDAE. Am. Midl. Nat. 53(1): 1-44, illus. Jan. 1955.

Kobayashi, Hideshi, and Kiyonori Okubo. (Tokyo U., Japan.) PROLONGATION OF MOLTING PERIOD IN THE CANARY BY LONG DAYS. Science 121(3140): 338-339, graph. Mar. 4, 1955.

Marshall, A. J. (Medical Coll., U. London, Eng.) DISPLAY AND THE SEXUAL CYCLE IN THE GREAT GREY BOWER-BIRD (CHLAMYDERA NUCHALIS JARDINE & SELBY). Proc. Zool. Soc. London 124(2): 219-227 + 1 pl. Aug. 1954.

Sabine, Winifred S. (503 Triphammer Rd., Ithaca, N. Y.) THE WINTER SOCIETY OF THE OREGON JUNCO: THE FLOCK. Condor 57(2): 88-111, graphs. Mar.-Apr. 1955.
Detailed study of social behavior in winter at Seattle, Wash. and in Inyo Co., Calif.

Wojtusiak, Roman J., and others. HOMING EXPERIMENTS ON BIRDS. PART IX. FURTHER INVESTIGATIONS ON TREE-SPARROWS, PASSER MONTANUS L. Acta Ornith. Musei Zool. Polonici (Warsaw) 4(7): 311-334, map. Nov. 1953.
In English. Twenty seven nesting sparrows were taken from their boxes and moved for distances up to 27 km. Thirteen (48%) of them were known to have homed from distances up to 19.5 km. regardless of direction. This performance by a nonmigratory species was far inferior to that obtained by the authors from migratory species, including Hirundo rustica.

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Behle, William Harroun. THE BIRDS OF THE DEEP CREEK MOUNTAINS OF CENTRAL WESTERN UTAH. U. Utah, Biol. Ser., 11(4). 34 p., illus. 1955.

Iowa Ornithologists' Union. IOWA DISTRIBUTIONAL CHECK-LIST. Iowa Bird Life 24(4): 72-79. Dec. 1954.
List shows status of each species in each of 9 regions of Iowa. There is also a hypothetical list, list of accidentals, and list of species now extinct in state.

Johnsgard, Paul A. (Wash. St. Coll.) BIRDS OBSERVED IN THE POTHOLES REGION DURING 1953-54. Murrelet 35(2): 25-31. May-Aug. 1954.
The Potholes Region of Grant Co., Wash., has been flooded by a reservoir, which makes this annotated list of particular value in following faunal changes.

Robertson, William B., Jr. (Ill. Nat. Hist. Survey.) [Review of] FLORIDA BIRD LIFE, by Alexander Sprunt, Jr. Everglades Nat. Hist. 3(1): 55-57. Mar. 1955. [For citation and description of Sprunt's volume see WR 79: 38.]
Early reviews of Sprunt's book were glowing, as the first reviews of a book often are. The picture may change drastically when experts begin to report. Robertson, an expert on birds and ecology of southern Fla., points out at length that this volume is riddled with errors, omissions, and inconsistencies. "They virtually require the early publication of an extended addenda and corrigenda... Would not both ornithological progress and public use have been served as well by publication of a thoroughly revised state list, including a complete bibliography of Florida ornithology since 1930?"

BIRDS--NUMBERS AND NUMBER FLUCTUATIONS

Richards, T. OUR CHANGING BIRD LIFE. N. H. Bird News 7(1): 3-16. 1954. [From Auk 72(1).]
"Population changes of many spp. are discussed in relation to hunting for home use, market hunting, land use, and introduction of foreign spp. during the period 1623-1900."

BIRDS--CONTROL, MORTALITY

Frenzel, L. D., and W. H. Marshall. (U. Minn.) OBSERVATIONS ON THE EFFECT OF THE MAY 1954 STORM ON BIRDS IN NORTHERN MINNESOTA. Flicker 26(4): 126-130, map. Dec. 1954.
Summary: "Weather conditions as a result of a storm which occurred in northeastern Minnesota between April 30 and May 10, 1954, have been described. 2. Influences of storm conditions upon bird life in some more seriously affected areas have been presented with special references to mortality and altered behaviorisms. 3. Several observations have been given of apparent effects of the storm on bird populations." See also WR 77: 42.

Frings, Hubert, Mable Frings, Beverly Cox, and Lorraine Peissner. (Pa. St. U.) RECORDED CALLS OF HERRING GULLS (LARUS ARGENTATUS) AS REPELLENTS AND ATTRACTANTS. Science 121(3140): 340-341. Mar. 4, 1955.

BIRDS--QUAIL

Boehnke, Roger H. (Iowa St. Coll.) WINTER MOVEMENTS AND COVEY COMPOSITION OF THE EASTERN BOB-WHITE. Proc. Iowa Acad. Sci. 61: 500-503. 1954.
Quail were trapped and banded on 3,320 acres of the Decatur Co. Quail Research Area, Iowa, in winters of 1951-54. Quail populations of this farmland area were estimated for Jan. 1 of each year to be 242, 211, and 120. Average loss, Oct.-Mar., was 23%. Losses were attributed chiefly to coveys leaving area. Corn-baited traps were effective only when snow was on ground. Few individuals

BIRDS--QUAIL--Continued

readily entered traps and became repeaters. Most coveys included a corn field in their ranges. From 189 quail banded, 7 bands were recovered (3.8%). The 7 returns represented periods of from 6 to 23 months and revealed movements of from 0-3½ miles. Sex ratios averaged nearly 1:1. Age ratios averaged about 4 or 5 young to one adult. "An interesting point is that during the winter of 1952-53, the sex ratio for 18 adults was 78 cocks to 22 hens. The sex ratio for 74 juveniles was 38 cocks to 62 hens. The change from majority of females to males taking place between the juvenile and adult years, seems to indicate that the high loss of birds occurred in the female segment of the population and that the loss of females occurred after the winter trapping and before hatching time." "Quail may occupy a so-called covey range year after year, but these are usually different quail."

Hanson, William R. PLANTS FOR IMPROVING LAND-USE AND BOBWHITE HABITAT IN NORTHWESTERN OKLAHOMA. Ph. D. thesis, Okla. A & M Coll. 1953.

Mraz, Frank R. THE RESPONSE OF BOBWHITE QUAIL TO ANTIBIOTICS. M. S. thesis, Pa. State U. 1953.

Parmalee, Paul W. (Ill. St. Mus., Springfield.) SOME FACTORS AFFECTING NESTING SUCCESS OF THE BOB-WHITE QUAIL IN EAST-CENTRAL TEXAS. Am. Midl. Nat. 53(1): 45-55, graphs. Jan. 1955.

Summary: "Male bob-whites begin calling about April 1, and by May 1, pairing is completed. The amount and density of ground cover produced during the winter or retained from the preceding year is important in determining early spring nesting success. Of the 59 quail nests recorded during the nesting season of 1951, 62.9 per cent were successful. Almost 80 per cent of the nests recorded were located in open pastures, fields, and meadows, or along grassy roadsides. The average number of eggs per clutch was 12.9. Limited data indicate that juvenal females (birds of the preceding year) may normally nest later in the season than females two years or older in age. A correlation of climatological data with adult-juvenile ratios and hatching dates of juvenal quail, indicates that with an average to heavy winter or early spring rainfall, a successful hatch and rearing season will usually result."

Ripley, Thomas H., and Lester E. Garvin. (Mass. Div. Game.) QUAIL WHISTLING COUNTS AS RELATED TO AREA AND EDGE VARIATION IN COVER TYPES ON CAPE COD, MASSACHUSETTS. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 21 p., graphs.

Summary: "1. Call-counts of quail on Cape Cod, Massachusetts demonstrate a direct, quantitative relationship to edge of abandoned fields and agricultural land interspersed. 2. Edge of open land seemed to be much more important in limiting quail than area of open land. 3. Hardwood forests showed an inverse, quantitative relationship to quail call-counts. 4. Relating game population indices to habitat that has been consistently mapped for large areas provides a means of examining cover requirements or preference. 5. Cover rating in specific areas appears feasible where consistent indices of game populations are available. 6. The use of aerial photographs in cover mapping offers many possibilities for studies of population-habitat relationships."

Rotsch, Dick. (Mo. Cons. Comm.) QUAIL--WHERE YOU WANT 'EM. Mo. Cons. 16(3): 3-5, illus. Mar. 1955.

A Mo. club established a 5,000-acre field trial area on private farmland in 1947. The supply of quail was fair at first but declined as farming intensified. Artificial stocking was tried 1948-53. This was not satisfactory, probably because most birds died or left the area because of shortage of food and cover. In 1954 the group was persuaded to try food plots. Thirteen plots of about ¼-acre each were planted, with at least 2 on each course. Seed mixture that was planted contained dwarf milo, dwarf kaffir, dwarf hegari, soybeans, cowpeas, foxtail millet, and Korean lespedeza. Plots were fertilized and fenced. Hard drought made success seem unlikely. Some species did fail. But autumn rains allowed seed to form and each plot supplied much winter food. Field trials on Dec. 18-19 were among the most successful ever held on the area. All coveys found were in or adjacent to food plots. Nearly all plots had coveys. A group of 40-50 quail flushed from one plot. Since plots were on courses, birds were where they were wanted. This was accomplished without any stocking in 1954.

BIRDS--PHEASANTS

Hale, James B. (Wis. Cons. Dept.) [51% OF GAME-FARM PHEASANTS ARE BAGGED.] Wis. Cons. Bul. 20(3): 15. Mar. 1955.
"Studies in recent years have shown that an average of 51 per cent of the cocks released in summer are killed the following fall. This figure is considerably higher than the return of 5 per cent in an earlier Wisconsin study. It also differs from returns in other states. The reason for this is believed due to the checking methods used. In the recent Wisconsin studies, as many hunters as possible were contacted personally when they finished a day of hunting. Such personal contacts yielded five to 10 times more banded birds than when hunters reported their pheasant take voluntarily after the season. If band returns are to show the true number of game-farm pheasants shot, it is absolutely necessary to check in the field all hunters using the study areas." Copied almost completely.

Kozicky, E. L., H. O. Hartley, and G. O. Hendrickson. (Iowa St. Coll.) A PROPOSED COMPARISON OF FALL ROADSIDE PHEASANT COUNTS AND FLUSHING RATES. Proc. Iowa Acad. Sci. 61: 528-534, map. 1954.
Proposes a statistically designed plan by which the correlation, if any, between roadside counts and flushing rates could be determined. Roadside counts would be made in Aug., very much as before. Flushing rates would be determined over 28 days in Oct. by a team of men working sample sections with bird dogs. The study is so planned that reliable conclusions could be drawn after 5 years. It would then be more nearly possible to say what roadside counts mean in terms of populations as reflected in flushing rates.

Lyon, L. Jack. EFFECTS OF WEATHER AND LAND-USE ON PHEASANT PRODUCTION IN NORTH-CENTRAL COLORADO. M. S. thesis, Colo. A & M Coll. June 1953.

Myers, Robert Donald. WINTER FOOD REQUIREMENTS OF PENNED RING-NECKED PHEASANTS AT ORONO, MAINE. M. S. thesis, U. Maine. vii + 59 p., illus. 1952. [Copy in US Dept. Int. Library.]

Sather, Henry. WHAT'S HAPPENED TO NEBRASKA PHEASANTS? Outdoor Nebraska 33(1): 18, 20. Winter 1955.
Population decline that has continued for several years is attributed to direct and/or indirect effects of more intensive agriculture, including cleaner farming and widespread use of insecticides and herbicides. An accompanying article by Phil Agee and Max Hamilton tells of research plans to get more information on the situation.

BIRDS--GROUSE, PARTRIDGE, ETC.

Crispens, Charles G., Jr. "CRAZY FLIGHT." Ohio Cons. Bul. 19(2): 12. Feb. 1955.
Discusses several theories that have been advanced to explain crazy flight of ruffed grouse in fall.

Dorney, Robert S. (Wis. Cons. Dept.) DO RUFFED GROUSE NEED A CLOSED SEASON? Wis. Cons. Bul. 20(3): 10-11, graph. Mar. 1955.
In 1953, Wis. grouse were abundant and many were shot. In 1954, a cold wet spring lowered fall populations by 50-60%. Grouse were scarce and wild, hard to shoot. The kill was small and did not hurt the population. There is no need to close the season during population lows, as Mich. has demonstrated over a period of years.

Koskimies, Jukka. SPECIES, SEX AND AGE RATIOS OF CAPERCAILLIE AND BLACKGAME IN THE KILL OF 1952 AND 1953. Suomen Riista 9: 7-16. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Much information on topics named and on variation in them during hunting season. "The differing effects of shortening the hunting season (1) from the beginning or (2) from the end are discussed."

BIRDS--GROUSE, PARTRIDGE, ETC.--Continued

Koskimies, Jukka. THE WEIGHT OF CAPERCAILLIE AND BLACKGAME. Suomen Riista 9: 124-125. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Weights of sex and age groups, Sept.-Nov., 1952 and 1953.

Krutovskaja, E. A. and E. V. EXPERIMENTS IN RAISING CAPERCAILLIE IN USSR. Suomen Riista 9: 85-104, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
"This article is a translation of an article originally published in Russian." Seems to pertain only to propagation in captivity.

Pynnönen, Alpi. CONTRIBUTION TO KNOWLEDGE OF HABITS OF THE HAZEL GROUSE. (BEITRAGE ZUR KENNTNIS DER LEBENSWEISE DES HASELHUHNS, TETRASTES BONASIA (L).) Papers on Game Res. 12. 1-90 p., illus. 1954.
Entirely in German. General life history of Finland's most common gallinaceous bird based mainly on extensive field observations by author. Provides information on behavior, breeding biology (clutch size, pairing, time of nesting, etc.), movements, populations, habitat, and distribution. One interesting section compares this bird with ruffed grouse in America. The species appear similar in many respects. Both do best in woods broken by clearings and stands of young trees. The male hazel grouse, however, defends a sharply defined territory by fighting and display. Instead of drumming, he jumps into the air (as high as 7 feet) and at the same time utters a characteristic call. The hazel grouse is monogamous and pairs frequently remain together during winter.--V. F. Flyger.

Seiskari, Pertti. THE FEEDING OF TETRAONIDS ON GRAINFIELDS. Suomen Riista 9: 185-186, maps. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Quantitative data on feeding of capercaillie, blackgame, and hazel grouse on grainfields. Such feeding is most common where agriculture is most intensive, and is rare or absent where there is little agriculture. Oats are the preferred grain by a wide margin.

Siivonen, Lauri. THE DECLINE OF TETRAONIDS IN 1954. Suomen Riista 9: 177-178, map. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
"...breeding events of the summer of 1954 'forecast' a typical decline autumn representative of the 3-4 year fluctuation in numbers. Small clutch size, large proportion of unhatched eggs and considerable brood losses contributed to a total loss of 60% (of normal clutch size) in capercaillie and of 50% in blackgame as early as the middle of July. According to the autumn game inquiry the most pronounced decline was limited to south and central Finland."

Siivonen, Lauri. (Finnish Game Foundation, Helsinki.) ON THE SHORT-TERM FLUCTUATIONS IN NUMBERS OF TETRAONIDS. Papers on Game Res. 13. 1-10 p., graphs. 1954.
Based on data covering 3 peaks and 4 lows in populations of 3 species of grouse in Finland, where fluctuations are of 3-4 years. Hatching success and brood size were maximal in years of peak autumn populations. Reverse was true in years of lows. Grouse fluctuations were synchronous with those of small rodents, but grouse lows regularly came a little sooner. Grouse populations regularly began to rise during the first part of the rodent low, while predator populations often were still considerable. Because of this and other evidence cited, the author concludes that the main, primary fluctuations of Finnish grouse populations were not dependent on numbers of rodents or predators. The truly important factors apparently are those that control breeding success.

BIRDS--TURKEY

Anonymous. SOUTH DAKOTA HUNTERS ENJOY FIRST MERRIAM'S WILD TURKEY SEASON. S. Dak. Cons. Digest 22(1): 12-13, illus. Jan. 1955.
In 1954, 750 hunters were allowed to hunt introduced turkeys in the Black Hills. Of the 582 hunters reporting, 120 bagged a turkey. Probable true success was about 17-20%. The paper gives data on sex and age data reported by hunters, locations of kills, distance of spread from original release sites, arms and hunting methods used, and effects of different guns on condition of turkeys shot. The present population grew from "over 100" turkeys released 1948-52. Many birds were shot 6-12 miles from any release site.

Anonymous. TURKEYS IN WYOMING. Wyoming Wildlife 19(3): 24-28, illus. Mar. 1955.
Turkeys are not native to Wyo., but thanks to transplanting of wild Merriam stock there are now colonies of them in nearly 1/3 of the counties. Permit hunting may be allowed soon. This article provides a map of present colonies, tells where releases were made, and gives related information about the birds and their habits.

Sincock, John L. AN EMERGENCY WINTER FOOD FEEDING TRIAL AND FOOD HABITS STUDY OF THE WILD TURKEY (MELEAGRIS GALLOPAVO SILVESTRIS) IN PENNSYLVANIA. M. S. thesis, Pa. State U. 64 p. 1953.

BIRDS--DOVES AND PIGEONS

Haglund, Bertil. THE WOOD PIGEON AS A GAME BIRD. Suomen Riista 9: 17-22, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
These pigeons have increased in northern Europe as land uses have changed. They are hunted over a long season to reduce crop damage, but protected during rest of year. Shooting should be concentrated on young, for many old birds are still rearing young during season. If hunting were delayed until all breeding was done, the hunting would be practically ended.

Korschgen, Leroy J. (Mo. Cons. Comm.) A STUDY OF THE FOOD HABITS OF MISSOURI DOVES. Mo. Cons. Comm., P-R Series no. 12. 1-31 p., map and graph. Jan. 1955.
Based on contents of 2,000 crops collected April-Oct., mostly 1951-53. Results are reported in detail for each month. Major foods were corn, wheat, foxtail grasses, small wild bean, sand croton, ragweed, hogwort, cane, and spurge. Many other plants were represented in small quantities. Animal foods, principally snails, comprised only 0.4% of diet. Data are given on percentages of doves with thickened crops (able to give dove's milk) in different months. In first week of hunting season (Sept. 1-30), 6-7% of doves were in this condition and presumably nesting. Most doves, however, have left state by mid-Sept., so hunting cannot be delayed.

Longwell, John R. (Md. Game Comm.) MOURNING DOVE PROJECT REPORT--1954 HUNTING SEASON. Md. Cons. 32(2): 27-28, illus. Mar. 1955.
Study of 810 dove wings collected in first 2 days of Md. season revealed that 78% of bagged doves were juveniles. Similar data are given for years 1949-54. The high proportion of juveniles suggests that the harvest might well be increased by means of a longer season. Study of wings for 1953 and 1954 "seems to indicate an increase in hatching from early May till the beginning of June when a peak is reached which extends through the early part of July. The hatching drops off then until the beginning of August when another peak is reached extending through the first three weeks of this month. After this hatching drops sharply with a few birds being hatched until the middle of September or later."

BIRDS--DOVES AND PIGEONS--Continued

Russell, Dan M. (Ky. Dept. Wildl. Resources.) KENTUCKY MOURNING DOVE STUDY / A FOUR YEAR PROGRESS REPORT FOR THE PERIOD JULY 1, 1949 TO JUNE 30, 1953. Ky. Dept. Fish & Wildl. Resources. vi + 90 p., illus., mimeo. Mar. 1954. [1955]

A detailed report of: studies of census methods and population trends, trapping and banding, nesting studies, hunting statistics, kill data, welfare factors, and management. A few of the conclusions follow. Roadside counts are most practical way to follow trends. Population is lowest in Dec. and highest in Sept., with sharp drop in Oct. owing to migration. Few birds from other states are shot in Ky. Peak of nesting is in late May and early June. About ½ of nesting attempts are successful. An average of 1 young is produced per nesting attempt. Greatest nesting losses occur while eggs are present. Two eggs per nest is normal. Baskets placed in trees were poorly utilized for nesting. Doves react quickly to gun pressure and will desert a repeatedly hunted area. Kill averages 1.5 per gun hour. Crippling loss is about 20%. At least 2/3 of doves bagged are young of year. Less than 10% of adults shot were probably breeding at the time. There is no apparent shortage of food, nest sites, or other natural requirements. Shooting should begin no later than Sept. 1, when population is at peak. Best way to reduce harvest is to delay opening of season past Sept. 1. Average weight of bagged doves is 115.6 grams. Doves are well able to take care of themselves. They rebound quickly from heavy losses, such as those caused by storm in 1951. Hunting is a minor mortality factor. Restrictions on hunting should be relaxed gradually until maximum allowable harvest is attained.

Schorger, A. W. (U. Wis.) THE PASSENGER PIGEON / ITS NATURAL HISTORY AND EXTINCTION. U. Wis. Press. xiii + 424 p., illus. 1955. $7.50.

Dr. Schorger has brought together an enormous amount of information that he carefully gleaned from old literature, both lay and scientific. His bibliography occupies 104 pages. His book is, without question, the authoritative work on the passenger pigeon and probably it is the most complete study of any extinct species. Chapters cover behavior, food, movements, roosts, nesting, utilization, capture, decrease and extinction, description, anatomy and physiology, nomenclature, distribution, migration, late records, and evaluation of illustrations. Statements are well documented; conflicting views are brought out and the author's conclusions about them are presented. Today we still hear debates about the cause of the pigeon's extinction. Were hunting, low reproduction, social behavior, disease, or felling of forests responsible? Could the bird have been saved by proper laws? Schorger's conclusions, based on many years of study, are worth considering: "The conclusion is inescapable that the passenger pigeon became extinct through such constant persecution that it was unable to raise sufficient young to perpetuate the race. Trapping and shooting were devastating. Drowning, disease if any, and all other suggested causes of extinction must have been minor in effect. The extremely lax enforcement of the protective laws, engendered by little heed for the morrow, should have a sobering influence when attention is called to any other species that is in danger of vanishing."

BIRDS--WATERFOWL

Addy, C. E. (Patuxent Refuge, Laurel, Md.) PROGRESS ON PROBLEMS OF WATERFOWL MANAGEMENT IN THE ATLANTIC FLYWAY. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 10 p.

A long, general paper that reviews progress, current problems, and approaches now being used by state and federal agencies. Main topics are Organization, Supply and Harvest, Habits and Habitat Requirements, Habitat Management, Regulations, and Enforcement. One interesting statement is: "At the moment we have no clear-cut analysis or accurate appraisal [of the population effect] of any one regulatory measure..."

BIRDS--WATERFOWL--Continued

Bell, James G., Laurence R. Jahn, and Lloyd Gunther. (Wis. Cons. Dept.) HORICON'S MANAGED GOOSE HUNT--1954. Wis. Cons. Bul. 20(3): 12-14, illus. Mar. 1955.

Improved arrangements were put into effect. Populations were higher and so were kills. Kills in managed unit were 1,115 geese and 4,012 ducks. The paper tells what changes were made in arrangements, summarizes hunters' opinions, and proposes further changes. It should be of value to others charged with managing public waterfowl shooting.

Benson, Dirck, and Donald Foley. (N. Y. Cons. Dept.) WATERFOWL PRODUCTION ON SMALL WILDLIFE MARSHES IN NEW YORK STATE. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 10 p., graphs.

N. Y. now has 550 areas developed under the small-marsh program. Areas vary in size but average 5 acres. Waterfowl use of 235 of these marshes for breeding was studied in 1953 and 1954. The present report presents results in some detail. Figures represent minimal estimates. In 1954, there were 35 pairs of ducks per 100 acres of water. There were broods on more than 60% of marshes, with average of 1.2 broods per marsh. Results were somewhat better in 1953. Considerable movement from unit to unit was noted. The small-marsh program is considered one of the most productive management programs ever undertaken by the state, both for waterfowl and other species.

Brakhage, George Knebel. MIGRATION PATTERNS AND MORTALITY RATES OF DUCKS HAND-REARED AND WILD-TRAPPED IN MANITOBA. M. A. thesis, U. Mo. vi + 75 p., maps. 1952. [Copy in US Dept. Int. Library.]

See J. Wildl. Mgt. 17(4).

Cowan, Archibald B. (Patuxent Refuge, Laurel, Md.) THE SCHIZOGONY OF LEUCOCYTOZOON SIMONDI IN DUCKS. Ph.D. thesis, U. Mich. 109 p. 1954. [Abstract in Dissertation Abstracts 14(4).]

Detailed study of tissue stages and cytology of this parasite. Although actual pathology is not discussed, the forms causing pathological changes are considered. There is also a brief consideration of the field significance of the disease and of problems of control.--A. B. Cowan.

Cowan, I. McT. (U. of B. C., Vancouver.) AN INDICATION OF POPULATION MIXING IN CANADA GEESE. Murrelet 35(3): 45. Sept.-Dec. 1954.

Two geese banded as juveniles within range of Branta c. moffitti in B. C. were recovered in summers of subsequent years in Bathurst Inlet area of N.W.T. in range ascribed by Delacour to B. c. parvipes.

Dickey, Charles. (Sporting Arms & Ammo. Mfrs. Inst., Rt. 2, Harrisburg, Pa.) SHOOTING MALLARDS ON REGULATED AREAS. Modern Game Breeding & Hunting Club News 25(2): 6-10, illus. Feb. 1955.

Paid shooting of pen-reared ducks has become better established and more important than most of us have realized. In Pa. alone, 10,500 ducks were killed at shooting preserves in 1954. In other terms, 1 duck was killed at a preserve for every 5 shot in the wild. Mallards are easily reared, easily trained for hunting flights, tolerate great crowding, and have little tendency to leave the place where reared and fed. This article tells in considerable detail just how to rear and care for the birds, how to train them for hunting, how to arrange the shooting grounds, and where to get more information on the subject. The business is said to be profitable from the first year. The author's claims as to how rapidly these pen-reared birds fly and how hard they are to hit have been confirmed by biologists who have participated in these commercial shoots.

Dresser, Cleveland van. FLORIDA'S HUNTING AND FISHING PICTURE / ST. MARKS WILDLIFE REFUGE. Florida Wildlife 8(10): 24-25, 45, illus. Mar. 1955.

Hunting and management of geese at this national refuge. Fresh-water impoundments and crop fields were developed for geese. Canadas increased from 6,000 to 25,000 between 1931 and 1953, when hunting began. Hunt was managed by state officials. Hunting was permitted only Wednesdays and Saturdays on only 3,500 acres of the area's 69,000 acres. Kill averaged almost 1 goose per hunter, but cripple loss was high.

BIRDS--WATERFOWL--Continued

Geis, Mary B. (U. Mont.) HONKERS' WINTER HAUNT. Mont. Wildl. 5(1): 8-10, illus. Winter 1955.
Short popular account of studies made on Canada geese in Flathead Valley, Mont., 1953-54. Courtship was underway in midwinter and egg-laying began in March. All goslings were flying by July. About 200 pairs nested in the Valley. Also present were 400-600 geese that were 1-2 years old, too young to breed. There were 2-10 eggs per clutch, usually 5-6. About 50-75% of pairs hatched at least some young. The 200 breeding pairs produced about 800 goslings in 1953 and about 600 in 1954. Broods left nest sites within two days; many broods traveled 8-12 miles to brood-rearing grounds. In 1953, about 625 goslings reached shooting age, and in 1954 about 500. Hunters killed some 365 geese in the Valley in 1953 and crippled about 120 more. Band returns indicated that approximately 280 of these were locally reared, and that 20% of the 1,400 geese present in July were shot. Possible management measures are outlined.

Goodman, Donald Charles. FUNCTIONAL ANATOMY OF THE FEEDING APPARATUS IN WATERFOWL (AVES: ANATIDAE). Ph. D. thesis, U. of Ill. 258 p. 1954. [From long abstract in Dissertation Abstracts 15(1).]
Study of bones, muscles, and ligaments of skull and front of neck in relation to feeding habits of species and groups.

Grenquist, Pekka. LONG-TAILED DUCK, THE MOST IMPORTANT GAME BIRD OF THE FINNISH ARCHIPELAGO. Suomen Riista 9: 72-80, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
Wintering, migration, nesting. Much information is given on spring and fall migrations. Shooting, oil, and cold winters are considered as factors that tend to decrease populations.

Handley, Delmar E. DUCKS AND OHIO'S FARM PONDS. Ohio Cons. Bul. 19(2): 6-7. Feb. 1955.
Figures on utilization of farm ponds by ducks. Almost 65% of ponds are used by ducks at some time of year. About 26% have had at least one brood reared on them. Kills are made at approximately 85% of ponds that are hunted. Average kill at a hunted pond is 4.5 waterfowl. Special study was made of 43 ponds near a large reservoir. On these ponds there were 28 broods of 176 young in a 3-month period. Wood duck boxes on farm ponds throughout state had 17% occupancy in 1954. Eight boxes were put up in 1950 on 3 ponds of a state game area. Seven were used first year and 50 young were brought off. In 1954, 14 of 19 boxes on same area were occupied and 102 young were produced.

Harris, Stanley W., Charles L. Buechele, and Charles F. Yocom. (U. Minn.) THE STATUS OF BARROW'S GOLDEN-EYE IN EASTERN WASHINGTON. Murrelet 35(3): 33-38, map. Sept.-Dec. 1954.
Breeding distribution in state, status throughout year, territory, nesting, broods, sex ratios.

Hooper, David C. WATERFOWL INVESTIGATIONS AT MINTO LAKES, ALASKA. M. S. thesis, U. Alaska. viii + 62 p., illus. 1952. [Copy in US Dept. Int. Library.]
See Proc. 2d Alaskan Sci. Conf.

Klein, Harold G. (Cornell U.) WOOD DUCK PRODUCTION AND USE OF NEST BOXES ON SOME SMALL MARSHES IN NEW YORK. N. Y. Fish & Game J. 2(1): 68-83. Jan. 1955.
From author's abstract: Study was made of 135 boxes on 38 farm marshes of central and w. N. Y. Evidence is given that type of box and amount of light at nest are main factors in a wood duck's choice of nesting site. A density of 1.5 boxes per acre is considered suitable. Raccoons destroyed 6 of 30 nests. Raccoons can be excluded by using wooden entrance tunnel or 4 x 3-inch, metal-faced entrance. Nesting period was late April to late July. Hatching peak in 1953 was first 3 weeks of June. Average of 12 clutches was 12.7 eggs. Average production per nest was 11.2 ducklings. Mortality of young was initially high, then leveled off. Survival definitely was better in marshes with vegetative cover than in open marshes.

BIRDS--WATERFOWL--Continued

Kozlik, Frank M. (Calif. Dept. Game.) WATERFOWL HUNTING AREAS OPERATED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME. Calif. Fish & Game 41(1): 33-53, illus. Jan. 1955.

In 1948 Calif. had only 3 public waterfowl shooting areas totaling 7,730 acres. In 1953 it had 12 totaling 29,775 acres. This paper gives much information on the areas, kills made on them, species composition of kills, and sources of hunters. Number of hunters using the areas rose from 2,037 to 37,334. Most hunters were not local men. Hunting success increased from 1.5 birds per hunter in 1948 to 2.6 per hunter in 1953. Pintails constituted most of the kill, but not on all areas.

Lee, Forrest B., and John R. Tester. (Minn. Div. Game.) FALL MIGRATION OF WATERFOWL IN MINNESOTA. Minn. Nat. 6(1): 16-19, map & graphs. Mar. 1955.

Studies in the fall of 1954 gave much information on numbers of waterfowl of various species present in Minn. before, during, and after hunting season. These data are graphed and discussed. It seems likely that too many local mallards and blue-wings were shot, with resulting diminution ("burn-out") of local breeding populations. Local breeders were already scarce in relation to amount of available habitat and then were heavily shot. In consequence, next year's breeding population may be even lower. Later hunting would have given a better chance for dispersal. "The opening date of the hunting season has promise of being the most effective tool for regulating the size of our breeding duck population. An examination of the graphs accompanying this article will show that an October 10 or 12 opening would very likely have given our own ducks a much needed break and there would have been plenty of ducks for the hunter too."

Nicholson, William Robert. A STUDY OF THE BREEDING WATERFOWL OF CORINNA STREAM. M. S. thesis, U. Maine. vi + 118 p., illus. 1953. [Copy in US Dept. Int. Library.]

Schiller, E. L. (Box 960, Anchorage, Alaska.) STUDIES ON THE HELMINTH FAUNA OF ALASKA. XVIII. CESTODE PARASITES IN YOUNG ANSERIFORMES ON THE YUKON DELTA NESTING GROUNDS. Trans. Am. Micros. Soc. 63(2): 194-201, illus. 1954. [From Auk 72(1).]

Siivonen, Lauri. THE NESTING CONDITIONS OF THE GOLDEN-EYE HAVE BEEN CONSIDERABLY IMPROVED. Suomen Riista 9: 26, map. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)

2000-3000 nest boxes have been put up for this duck in Finland since 1952. In 1954 about half of the boxes were used.

Speake, Daniel Webster, III. SEASONAL ABUNDANCE OF WATERFOWL ON SAMPLE AREAS IN LEE COUNTY, ALABAMA. M. S. thesis, Ala. Polytechnic Inst. xiv + 110 p., illus. Processed. Mar. 1955. [Produced in limited numbers for deposit only in libraries of major schools offering training in game management.]

Ecological study of fluctuating abundance of 19 species in a variety of habitats such as creeks, small impoundments, swamps, and beaver ponds. Most numerous species were ring-neck, mallard, wood duck, coot, and scaup. Food habits are discussed on basis of field observations and analyses of stomach contents of 23 ducks.

Uhler, Francis M. (Patuxent Refuge, Laurel, Md.) WATERFOWL MANAGEMENT IN UNFAVORABLE SITES. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 5 p.

Condensed data on many habitat improvement measures that have worked at Patuxent Research Refuge. Among the topics are: advantages of draw-downs in alternate years, self-perpetuating food plants for draw-down flats, lessening turbidity by use of decomposing vegetation or control of water-roiling animals, reducing dark stain in water, food plants suitable for acid waters and margins of such waters, value for brood cover of spatterdock and buttonbush, value of switch grass for nesting cover, use of small islands for resting and nesting, control of predators of eggs and young, and preferred design of water control structures.

BIRDS--WATERFOWL--Continued

U. S. Fish & Wildlife Service and Canadian Wildlife Service. WATERFOWL POPULATIONS AND BREEDING CONDITIONS SUMMER 1954. US F&WS, Spec. Sci. Rep.-Wildl. no. 27. [iv +] 288 p., maps & graphs. Feb. 1955.
Annual report of field studies on which waterfowl regulations are based. It consists of 45 separate reports that deal with many areas. These reports were written by and credited to numerous workers in state, U. S., and Canadian governments and other organizations. Data pertain chiefly to methods, water conditions, waterfowl populations, production in sample areas, and banding. Reports are individually summarized.

Weller, Milton Webster. GROWTH RATE AND PLUMAGE DEVELOPMENT OF THE REDHEAD DUCK (AYTHYA AMERICANA). M. A. thesis, U. Mo. viii + 86 p., illus. 1954. [Copy in US Dept. Int. Library.]

BIRDS--CRANES, RAILS, SHOREBIRDS

Caslick, James W. (Newfield, N. Y.) SANDHILL CRANES IN YELLOWSTONE PARK. Auk 72(1): 82-83. Jan. 1955.
Numbers in Hayden Valley, nesting, defensive behavior.

Tanner, Ward Dean. ECOLOGY OF THE VIRGINIA AND KING RAILS AND THE SORA IN CLAY COUNTY, IOWA. Ph.D. thesis, Iowa St. Coll. 154 p. 1953.

Tanner, Ward D., and George O. Hendrickson. (Iowa State Coll.) ECOLOGY OF THE VIRGINIA RAIL IN CLAY COUNTY, IOWA. Iowa Bird Life 24(4): 65-70. Dec. 1954.
"In summary, at the 402-acre Dewey's Pasture Public Shooting Ground, with 28 small marshes, Clay County, Iowa, 42 adult and 101 young Virginia Rails were banded and released, 1951 and 1952. The only band return known to the writers was reported from an adult Virginia Rail banded July 11, 1952, and caught in a muskrat trap December 1, 1953, near Glenwood, Minnesota, 175 miles directly north of the study area. April 29, 1952, was the earliest arrival date, and the latest sight record was October 3, 1952. On 107 acres of cover searched, 37 occupied nests were found in lake sedge primarily. Of 190 eggs in 27 nests 144 hatched between June 6 and July 12, 1951. In 28 complete clutches of both years were 227 eggs, an average of about 8 a clutch. The estimated time of incubation for 3 closely observed nests was 18 days, and 22 days for a fourth. An estimated 160 downy young hatched from 21 successful nests, 1951, to average 7.6 a clutch, or about 2 an acre of 81.4 acres of suitable cover." Data are also given on nature of nests and nest sites, rate of egg laying, egg predators, egg parasitism by Sora, lack of territorialism, development of young, and travels of young.

Tomkins, Ivan R. (1231 E. 50th St., Savannah, Ga.) LIFE HISTORY NOTES ON THE AMERICAN OYSTER-CATCHER. Oriole 19(4): 37-45, illus. Dec. 1954.
Habitats and habitat requirements, breeding behavior, characteristics of young.

U. S. Fish & Wildlife Service and Canadian Wildlife Service. INVESTIGATIONS OF WOODCOCK, SNIPE, AND RAILS IN 1954. US F&WS, Spec. Sci. Rep.-Wildl. no. 28. ii + 62 p., maps & graphs. Feb. 1955.
The annual reports on cooperative studies of these birds contain much information on biology and populations of the species and methods of studying them. The present number consists of 12 contributions: Summary of Investigations of Woodcock, Snipe, and Rails in 1954, by J. W. Aldrich. Wintering Woodcock Populations in West-Central Louisiana, 1953-54, by V. H. Reid and Phil Goodrum. Woodcock Singing Ground Counts in Canada - 1954, by R. D. Harris. Woodcock Census Studies in Northeastern United States - 1954, by H. L. Mendall. Woodcock Singing Ground Counts in Central-Eastern United States - 1954, by P. F. English. Woodcock Investigations in the Central-Northern United States, 1954, by J. W. Aldrich. Massachusetts Woodcock Studies - 1954, by W. G. Sheldon. Wilson's

BIRDS--CRANES, RAILS, SHOREBIRDS--Continued

Snipe Wintering Ground Studies, 1953-54, by C. S. Robbins. Wilson's Snipe Populations and Hunting Pressure in the Northwest, by T. D. Burleigh. Some Observations on Nocturnal Activity of Wilson's Snipe - Newfoundland (1953), by L. M. Tuck. Distribution and Abundance of the Wilson's Snipe in Western Canada, by C. S. Robbins. Sora Rail Populations in Alberta, 1953-54, by A. G. Smith.

OTHER BIRDS

Mayr, Ernst. (Harvard U.) COMMENTS ON SOME RECENT STUDIES OF SONG BIRD PHYLOGENY. Wilson Bul. 67(1): 33-44. Mar. 1955.
Discussion and critique of work of Tordoff and Beecher. Logical traps in phylogenetic studies are spotlighted.

Russak, Maurice L. (1675 Metropolitan Ave., N. Y. 62, N. Y.) PINE AND YELLOW-THROATED WARBLERS FEEDING ON THE WHITE PINE SCALE INSECT. Auk 72(1): 80. Jan. 1955.

Seiskari, Pertti. A SIMPLE HAWK TRAP. Suomen Riista 9: 190, illus. 1954. (In Finnish. English abstracts on separate, mimeo. sheets.)
A simple, sensitive live trap to be used with decoy.

REPTILES AND AMPHIBIANS

Allen, J. Frances, and Robert A. Littleford. (U. Md.) OBSERVATIONS ON THE FEEDING HABITS AND GROWTH OF IMMATURE DIAMONDBACK TERRAPINS. Herpetologica 11 (1): 77-80. Mar. 1955.
Data on care, feeding, and growth in laboratory of newly hatched young to end of second year.

Auffenberg, Walter. (U. Fla.) A RECONSIDERATION OF THE RACER, COLUBER CONSTRICTOR, IN EASTERN UNITED STATES. Tulane Studies in Zool. 2(6): 89-155, illus. Feb. 1955.
An exceptionally thorough study of variation and subspecies of this snake, with special emphasis on the Southeast. Far western populations are considered only in general. Much attention is devoted to clines of variation. Eight subspecies are recognized, one of them new. The paper is based on a master's thesis, but many doctoral dissertations represent less work.

Bragg, Arthur N. (U. Okla.) A SECOND SEASON WITH RANA AREOLATA IN OKLAHOMA. Wasmann J. Biol. 12(3): 337-343. Fall 1954.
Discussion of breeding biology; mensural data that bear on subspecies problem.

Bragg, Arthur N. (U. Okla.) THE AMPHIBIA OF CHEROKEE COUNTY, OKLAHOMA. Herpetologica 11(1): 25-30. Mar. 1955.
Annotated list of 29 species and subspecies.

Breckenridge, W. J. (U. Minn.) OBSERVATIONS ON THE LIFE HISTORY OF THE SOFT-SHELLED TURTLE TRIONYX FEROX, WITH ESPECIAL REFERENCE TO GROWTH. Copeia 1955(1): 5-9, map and graph. Feb. 1955.
Habitat, trapping, marking, sex characters, local movements, size, growth rate.

Cable, R. M., and W. B. Hopp. (Purdue U.) ACANTHOCEPHALAN PARASITES OF THE GENUS NEOECHINORHYNCHUS IN NORTH AMERICAN TURTLES WITH THE DESCRIPTIONS OF TWO NEW SPECIES. J. Parasit. 40(6): 674-680, illus. Dec. 1954.

REPTILES AND AMPHIBIANS--Continued

Edgren, Richard A., and Margery K. (G. D. Searle & Co., Box 5110, Chicago 80, Ill.) EXPERIMENTS ON BLUFFING AND DEATH-FEIGNING IN THE HOGNOSE SNAKE HETERODON PLATYRHINOS. Copeia 1955(1): 2-4. Feb. 1955.
Numerous trials with 1 tame individual "suggest that the bluffing and letisimulatory behavior...is not stimulated by injections of nor-epinephrine, epinephrine or acetylcholine." Mediating mechanism of the behavior remains unknown, but several postulated mechanisms now can be ruled out.

Edgren, Richard A. (G. D. Searle & Co., Chicago 80, Ill.) POSSIBLE THERMOREGULATORY BURROWING IN THE LIZARD CNEMIDOPHORUS SEXLINEATUS. Chi. Acad. Sci., Nat. Hist. Misc. no. 141. 2 p. Mar. 1955.

Fischthal, Jacob H. (Harpur Coll.) ECOLOGY OF WORM PARASITES IN SOUTH-CENTRAL NEW YORK SALAMANDERS. Am. Midl. Nat. 53(1): 176-183. Jan. 1955.

Fitch, Henry S. (U. Kans.) HABITS AND ADAPTATIONS OF THE GREAT PLAINS SKINK (EUMECES OBSOLETUS). Ecol. Monog. 25(1): 59-83, illus. Jan. 1955.
Important life history study. The paper represents 5 years of field work and unquestionably is the most significant contribution to knowledge of ecology of this lizard. Most work was done near Lawrence, Kansas, but information gathered by others is summarized. Subjects treated include: description, relationships, habitat, distribution, behavior, movements, breeding, growth, food habits, predation, parasitism, and numbers.

Grant, William C., Jr. (Coll. of Wm. & Mary.) TERRITORIALISM IN TWO SPECIES OF SALAMANDERS. Science 121(3135): 137-138. Jan. 28, 1955.
Captive Hemidactylium scutatum and Eurycea bislineata in terraria mostly set up small home ranges and selected shelter sites. Other individuals were excluded from shelter sites by a type of display or by actual attack. It is interesting to note that individuals that did not establish home ranges, but continued to wander, refused to accept food and eventually starved to death.

Hamilton, W. J., Jr., and Joseph A. Pollack. (Cornell U.) THE FOOD OF SOME CROTALID SNAKES FROM FORT BENNING, GEORGIA. Chi. Acad. Sci., Nat. Hist. Misc. no. 140. 4 p. Mar. 1955.
Report on food items found in 26 Crotalus horridus, 13 Ancistrodon contortrix, 9 Ancistrododon piscivorus, and 12 Sistrurus miliarius.

Hotton, Nicholas, III. (U. Kans.) A SURVEY OF ADAPTIVE RELATIONSHIPS OF DENTITION TO DIET IN THE NORTH AMERICAN IGUANIDAE. Am. Midl. Nat. 53(1): 88-114. Jan. 1955.

Karlstrom, E. L., and Sherburne F. Cook, Jr. (U. Calif., Berkeley.) NOTES ON SNAKE ANESTHESIA. Copeia 1955(1): 57-58. Feb. 1955.
Value, safety, and use of nembutol, pentothal sodium, and M.S. 222.

Medem, Fred, and Hymen Marx. (Univ. Nacional, Bogota, Columbia.) AN ARTIFICIAL KEY TO THE NEW-WORLD SPECIES OF CROCODILIANS. Copeia 1955(1): 1-2. Feb. 1955.

Murray, Keith F. (U. Calif., Berkeley.) HERPETOLOGICAL COLLECTIONS FROM BAJA CALIFORNIA. Herpetologica 11(1): 33-48. Mar. 1955.
Reports much new material that has accumulated in Mus. Vert. Zool. Includes information on distribution, taxonomy, and ecology.

Najarian, Haig H. (U. Mich.) TREMATODES PARASITIC IN THE SALIENTIA IN THE VICINITY OF ANN ARBOR, MICHIGAN. Am. Midl. Nat. 53(1): 195-197. Jan. 1955.

Parmalee, Paul W. (Ill. St. Mus., Springfield.) AMPHIBIANS OF ILLINOIS. Ill. State Mus. 38 p., illus. 1955? 25¢. [From Sci. News Letter 67(10).]
"An aid to the identification and understanding of these coldblooded vertebrates."

REPTILES AND AMPHIBIANS--Continued

Smith, Philip W., and James C. List. (Ill. Nat. Hist. Survey, Urbana.) NOTES ON MISSISSIPPI AMPHIBIANS AND REPTILES. Am. Midl. Nat. 53(1): 115-125. Jan. 1955.
Locality and descriptive data for 76 forms.

Wheeler, George C. (U. of N. Dak.) THE AMPHIBIANS AND REPTILES OF THE NORTH DAKOTA BADLANDS. Theodore Roosevelt Nature & History Assn., Medora, N. Dak. 1-56 p., illus. 1954.
Not just a list of Badlands records, but a handbook "useful anywhere in the State south and west of the Missouri River." It has keys to adults and tadpoles, and to eggs of both reptiles and amphibians. Species accounts cover range, local records, description, habits and habitat, and breeding. Material in species accounts is largely compiled or quoted. One or 2 photographs are given for each species.

Willis, Yuell Lindy. BREEDING, TRANSFORMATION AND DETERMINATION OF AGE OF THE BULLFROG (RANA CATESBEIANA SHAW) IN MISSOURI. M. A. thesis, U. Mo. 63 p., illus. 1954. [Copy in US Dept. Int. Library.]

Wood, John Thornton, and Ollie King Goodwin. (Box 534, Williamsburg, Va.) OBSERVATIONS ON THE ABUNDANCE, FOOD, AND FEEDING BEHAVIOR OF THE NEWT, NOTOPHTHALMUS VIRIDESCENS VIRIDESCENS (RAFINESQUE), IN VIRGINIA. J. Elisha Mitchell Sci. Soc. 70(1): 27-30. June 1954.
The newt is widely distributed in Va. Local abundances were found in three localities in se. Va., and evidence of a large population of the eft stage was found in Shenandoah National Park. Snails, pill clams, ostracods, and amphibian eggs were noteworthy among a wide variety of organisms eaten.--Neil Hotchkiss.

FISHES

Bigelow, Henry B., and William C. Schroeder. FISHES OF THE WESTERN NORTH ATLANTIC. SAWFISHES, GUITARFISHES, SKATES, RAYS AND CHIMAEROIDS. Yale U., Sears Found. Marine Research, Mem. no. 1, pt. 2. xvi + 588 p., 127 figs. 1953. $15.00. [From review by L. P. Schultz, Nat. Hist. 64(3).]
Second volume of an elaborate, authoritative, and encyclopedic reference on species treated. It is designed to be useful to both laymen and scientists. Keys, descriptions, and drawings facilitate identification. Discussions cover size, early stages, habits, relation to man, and distribution. Synonymies contain extensive lists of references to the species.

INVERTEBRATES

Roscoe, Ernest J. (U. Utah.) AQUATIC SNAILS FOUND ATTACHED TO FEATHERS OF WHITE-FACED GLOSSY IBIS. Wilson Bul. 67(1): 66. Mar. 1955.
Proof that some aquatic invertebrates are transported on bodies of birds. Hunters and others who handle birds are urged to turn over to specialists any molluscs found on birds.

VEGETATION--GENERAL, ECOLOGY, CONTROL, TECHNIQUES

Allred, B. W., and Homer C. Mitchell. (US Soil Cons. Serv.) MAJOR PLANT TYPES OF ARKANSAS, LOUISIANA, OKLAHOMA AND TEXAS AND THEIR RELATION TO CLIMATE AND SOILS. Texas J. Sci. 7(1): 7-19, illus. Mar. 1955.
Each major type is discussed briefly. Good habitat photographs and useful ecological map of the 4-state area.

VEGETATION--GENERAL, ECOLOGY, CONTROL, TECHNIQUES--Continued

Poore, M. E. D. (U. Cambridge, Eng.) THE USE OF PHYTOSOCIOLOGICAL METHODS IN ECOLOGICAL INVESTIGATIONS. I. THE BRAUN-BLANQUET SYSTEM. II. PRACTICAL ISSUES INVOLVED IN AN ATTEMPT TO APPLY THE BRAUN-BLANQUET SYSTEM. J. Ecol. 43(1): 226-269, illus. Jan. 1955.

The competing systems for classifying vegetation afford one of the most difficult and controversial phases of ecology today. Poore provides an important discussion and analysis of these systems. He brings out the good and bad points of various schools and shows how he proposes to adapt the better features for his own work. The paper appears to be required reading for all workers who are seriously concerned with the classification techniques and systems involved.

Sauer, Jonathan. (U. Wis.) REVISION OF THE DIOECIOUS AMARANTHS. Madroño 13(1): 5-46, illus. Jan. 1955.

Keys, describes, discusses, and maps ranges of 10 species of Amaranthus. Five of these have comprised the genus Acnida in manuals. Amaranthus cannabinus (Acnida cannabina) is an important duck-food plant in east-coast tidal marshes.--Neil Hotchkiss.

VEGETATION--FLORAS AND COMMUNITIES

Caplenor, Charles Donald. THE VEGETATION OF THE GORGES OF THE FALL CREEK FALLS STATE PARK IN TENNESSEE. Ph.D. thesis, Vanderbilt U. 165 p. 1954. [From long abstract in Dissertation Abstracts 15(3).]

Ecological study of forest communities and successions. The gorges contain some of the last virgin forest communities in the Cumberland Plateau region.

Cooke, Wm. Bridge. (US Public Health Serv., Cincinnati, Ohio.) FUNGI, LICHENS AND MOSSES IN RELATION TO VASCULAR PLANT COMMUNITIES IN EASTERN WASHINGTON AND ADJACENT IDAHO. Ecol. Monog. 25(2): 119-180, map & graphs. Apr. 1955.

Culberson, William L. (Harvard U.) THE CORTICOLOUS COMMUNITIES OF LICHENS AND BRYOPHYTES IN THE UPLAND FORESTS OF NORTHERN WISCONSIN. Ecol. Monog. 25(2): 215-231, illus. Apr. 1955.

Dansereau, Pierre. (U. Mich.) STUDIES ON CENTRAL BAFFIN VEGETATION. I. BRAY ISLAND. Vegetatio Acta Geobotanica 5-6: 329-339, illus. 1954.

Report of study made May-September 1950 on a low-lying limestone schist and gravel area 22 by 17 miles in extent. Seaward there are extensive marl flats. Inland are many shallow, marsh-surrounded pools. The island is believed to have emerged within 100 years. The communities are salt marsh (dominated by Puccinellia), sandy beach (Mertensia only), schist ridges (saxifrages, etc.), heaths (Dryas, willow, mosses, etc.), marsh (mosses, Dupontia fisheri, Carex salina, and other grasses and sedges), and ponds and rivulets (copepods, cladocerans, bluegreen algae, and green algae). Many birds were present in mid-August: mostly Arctic terns, plover, ducks, and jaegers.--Neil Hotchkiss.

Goodlett, J. C. VEGETATION ADJACENT TO THE BORDER OF THE WISCONSIN DRIFT IN POTTER COUNTY, PENNSYLVANIA. Harvard Forest, Petersham, Mass. Bul. no. 25. 93 p. 1954. 50¢. [From J. Forestry 53(4).]

Kaufeldt, Carlos E. (U. San Francisco.) OBSERVATIONS ON SAN FRANCISCO'S LAST MAJOR SAND DUNE, WITH NOTES ON ITS FLORA AND INSECT FAUNA. Wasmann J. Biol. 12(3): 293-336, illus. Fall 1954.

Ecological study made just before dunes were bulldozed away.

Ku, Tao Timothy. FOREST SUCCESSION ON THE POORLY-DRAINED SOILS IN THE HIGGINS LAKE AREA OF MICHIGAN. Ph.D. thesis, Mich. St. Coll. 211 p. 1954. [From abstract in Dissertation Abstracts 15(2).]

VEGETATION--FLORAS AND COMMUNITIES--Continued

Oosting, Henry J. (Duke U.) ECOLOGICAL PROCESSES AND VEGETATION OF THE MARITIME STRAND IN THE SOUTHEASTERN UNITED STATES. Bot. Rev. 20(4): 226-262. April 1954.
A digest of the information in 62 publications.

Ovington, J. D. (Nature Conservancy, London, Eng.) STUDIES OF THE DEVELOPMENT OF WOODLAND CONDITIONS UNDER DIFFERENT TREES. III. THE GROUND FLORA. J. Ecol. 43(1): 1-21, graph. Jan. 1955.
Summary: "In three diverse localities the ground floras in a series of forest plots, planted with different tree species [conifers], are examined. Marked differences occur in the plant communities formed under the various tree stands and in adjoining unplanted areas. Plant lists and frequencies are given for the ground floras, and the complex relationships of the vegetation to the woodland environment as a whole are discussed. Seral stages in the development of the plantations are recognized and estimations of the weights of water, dry matter, ash, carbon and nitrogen in the various ground vegetations are made. It is suggested that the ground flora gives some indication of site conditions, and its study is therefore of value in considering methods of reafforestation." Parts I and II of these British studies dealt with soils pH and the forest floor. They appeared in J. Ecol. vols. 41 & 42, 1953.

VEGETATION--TREES

Carhart, Arthur H. TIMBER IN YOUR LIFE. J. B. Lippincott Co., Phila., Pa. 317 p. 1955. $4.00. [From review by J. W. Spencer, J. Forestry 53(3).]
"This book should be required reading for everyone who teaches conservation in our schools and for every member of Congress. It is the best thing of its kind I have yet seen." "Carhart...has a remarkable grasp of the principles of sound forest land management." His book "reads like a novel and yet plumbs the depths of resource management and its relationship to wise land use... He tells of forest fires, storms, and hard everyday work, and also tells of the land grabs, mining claim abuses, and the other political and selfish things." He traces American forestry from earliest days to the present. Research, insect damage, watersheds, and soil erosion are well discussed. "The importance of forests as reservoirs of wildlife and as places for human recreation are emphasized with much interesting and impressive statistical information. The figures on hunting and fishing in terms of money expenditures are startling... The book is replete with statistical information that is well handled, distributed in appropriate places, and does not make tedious reading... After reading the book through twice I still do not see how Carhart covered so wide a field so completely and in such few pages."

Forest Survey Staff. FOREST STATISTICS FOR CALIFORNIA. US Forest Serv., Calif. Forest & Range Exp. Sta. (Berkeley), Forest Survey Release no. 25. [iii +] 66 p., map & graphs. Dec. 1954.
Area, ownership, stand-size classes, timber types, timber volumes, growth, annual cut, and comparison with report of 1945. Much tabular information.

Frank, Bernard. OUR NATIONAL FORESTS. U. Okla. Press. xx + 238 p., illus. 1955. $4.00.
The approximately 180 million acres in our 148 national forests constitute only about 1/6 of the country's commercial timberland. Nevertheless, they furnish a large part of the water supplies for more than half the western irrigated farms, much of the water used by water-power plants and cities of the West, and recreation for 35 million people each year. Multiple use involves watershed protection, harvest of timber, conservation of soil, wise grazing, wildlife management, and recreation. This book, by an Assistant Chief of the Forest Service, describes the problems involved in managing forests wisely for highest return to the most people for the longest time. Among the most important are adequate control of fire, harvesting timber for sustained yield, providing for adequate wildlife harvests, combating fraudulent mining claims, saving wilderness areas, and maintaining generally healthful conditions in the face of heavy tourist use. The book will give readers an insight into management of some of our most valuable natural resources.--Fred H. Dale.

VEGETATION--TREES--Continued

Hall, T. F. and G. E. Smith. (TVA, Wilson Dam, Ala.) EFFECTS OF FLOODING ON WOODY PLANTS, WEST SANDY DEWATERING PROJECT, KENTUCKY RESERVOIR. J. Forestry 53(4): 281-285, graph. Apr. 1955.
Data on tolerance of 39 woody species to periodic flooding. Much of the timber in the storage basin was killed.

Minnesota. THE FOREST RESOURCE OF ST. LOUIS COUNTY. Office of Iron Range Resources & Rehabilitation, 624 State Office Bldg., St. Paul 1, Minn. 1-71 p., illus. [1955.]
Good account of forest types and areas, size classes, volumes, growth, drain, value, industrial uses and users, and opportunities for improved management in each of 11 forest types.

Northeast Forest Survey. FOREST STATISTICS FOR NEW YORK FOREST DISTRICT NO. 1 AND NO. 7. Revised editions. US Forest Serv., NE Forest Exp. Sta. (Upper Darby, Pa.) Forest Statis. Ser.: N. Y. nos. 16 and 17. Two separate reports. No. 16 has ii + 19 p. No. 17 has ii + 17 p. 1954.
District 1 includes Delaware, Otsego, and Schoharie counties. District 7 consists of St. Lawrence Co.

VEGETATION--PASTURE AND RANGE

Hulbert, Lloyd C. (U. Minn.) ECOLOGICAL STUDIES OF BROMUS TECTORUM AND OTHER ANNUAL BROMEGRASSES. Ecol. Monog. 25(2): 181-213, illus. Apr. 1955.
Contains much information of basic value in range management.

Launchbaugh, John L. (U. Calif., Berkeley.) VEGETATIONAL CHANGES IN THE SAN ANTONIO PRAIRIE ASSOCIATED WITH GRAZING, RETIREMENT FROM GRAZING AND ABANDONMENT FROM CULTIVATION. Ecol. Monog. 25(1): 39-57, illus. Jan. 1955.
Good study of successions in tall-grass prairie of central Texas.

Pechanec, J. F., and others. SAGEBRUSH BURNING, GOOD AND BAD. USDA, Farmers Bul. no. 1948, revised. 34 p., illus. 1954. 20¢ from Superintendent of Documents. [From J. Forestry 53(3).]

Plummer, A. P., and others. SEEDING RANGELANDS IN UTAH, NEVADA, SOUTHERN IDAHO, AND WESTERN WYOMING. USDA, Agr. Handbook no. 71. 73 p., illus. Jan. 1955. 30¢ from Superintendent of Documents. [From J. Forestry 53(4).]

VEGETATION--WET-LAND

Cappel, E. Dan. (U. of Minn.) THE GENUS SCIRPUS IN NORTH CAROLINA. J. Elisha Mitchell Sci. Soc. 70(1): 75-91, illus. June 1954.
Keys, describes, and discusses 20 species and varieties. Distribution maps show their ranges and drawings contrast their fruits.--Neil Hotchkiss.

Gruchy, James H. B. de. WATER FLUCTUATION AS A FACTOR IN THE LIFE OF THE HIGHER PLANTS OF A 3300 ACRE LAKE OF THE PERMIAN RED BEDS OF CENTRAL OKLAHOMA. Ph.D. thesis, Okla. A & M Coll. 1952.

Wood, R. D. (U. of R. I.) THE CHARACEAE OF LAKE MATTAMUSKEET, NORTH CAROLINA. J. Elisha Mitchell Sci. Soc. 70(1): 60-74, illus. June 1954.
In the very shallow water of this 30,000-acre restored lake in Hyde County, muskgrasses covered 7,500 acres in 1951, 15,000 acres in 1952, and 17,000 acres in 1953. Before 1949 there was little vegetation in the lake and the water was turbid. As the muskgrasses spread, it cleared. "The importance of these plants as duckfood is indicated by a record bird population at this lake in 1953, an occurrence not reflected at most adjacent refuge areas." Four species of Nitella and two varieties of a single species of Chara are keyed, described, and illustrated.--Neil Hotchkiss.

GENERAL CONSERVATION, WATER, AND CLIMATE

Allen, Shirley W. (U. Mich.) CONSERVING NATURAL RESOURCES: PRINCIPLES AND PRACTICE IN A DEMOCRACY. McGraw-Hill, N. Y. 36, N. Y. 347 p., illus. 1955. $5.50. [From long review by H. F. Quick, J. Forestry 53(4).]

"A dynamic new text which is likely to become more appreciated by both teachers and students as it is used..." It "proceeds from a consideration of the basic resources--climate, water, and soil--to a treatment of the dependent resources--forests, grasslands, wildlife, and man. Both replaceable and irreplaceable resources are classified and described. A chapter is devoted to mineral resources. A bibliography is appended at the end of each chapter." The book "presents a treatment of the subject of 'human powers'... This area is somewhat new to conservationists and Prof. Allen is to be complimented for its inclusion... A clear and affirmative view that America still has an abundance of resources is offered to the reader with logical reasons why proper use and management are imperative to our security. Forthright opinions are proffered about governmental conservation policy which will be of increasing historical significance... The text is suitably tuned to all college levels. It can readily be presented either as a major or a minor course with the aid of the teacher's manual." Allen "describes quarter and semester courses at the two-, three-, or four-credit level with chapter by chapter suggestions about 'What to emphasize.'" Illustrations are good. Diagrams are used advantageously to illustrate principles, practices, statistics, concepts, and ideas.

Allen, Shirley W. (U. Mich.) LAND OWNERSHIP--A RIGHT OR A PRIVILEGE? Mich. Cons. 24(2): 8-11. Mar.-Apr. 1955.

Barrows, J. S., V. J. Schaefer, and P. B. MacCready. PROJECT SKYFIRE--A PROGRESS REPORT ON LIGHTENING FIRE AND ATMOSPHERIC RESEARCH. U. S. Forest Serv., Intermtn. Forest & Range Exp. Sta. (Ogden, Utah), Res. Paper no. 35. viii + 49 p., illus. Nov. 1954.

Brown, Harrison. THE CHALLENGE OF MAN'S FUTURE: AN INQUIRY CONCERNING THE CONDITION OF MAN DURING THE YEARS THAT LIE AHEAD. Viking Press, N. Y. xii + 290 p., illus. 1954. $3.75. [From long review by Howard Zahniser, Nat. Mag. 48(5).]

"Dr. Brown visualizes the future course of history as 'determined by the rates at which people breed and die, by the rapidity with which non-renewable resources are consumed, by the extent and speed with which agricultural production can be improved, by the rate at which the underdeveloped areas can industrialize, by the rapidity with which we are able to develop new resources, as well as by the extent to which we succeed in avoiding future wars.' Realizing that 'these factors are interlocked,' he considers them separately, for their better understanding, in chapters that are amazingly rich in factual detail and in interpretive brilliance--chapters entitled 'Vital Statistics,' 'Food,' 'Energy,' and 'Things.' In a concluding chapter on 'Patterns of the Future' he sees 'the possibility of the emergence of any of three possible patterns of life.'"

Report of the Mid-Century Conference on Resources for the Future. THE NATION LOOKS AT ITS RESOURCES. Resources for the Future, Inc., Wash., D. C. 418 p. 1954. $5.00. [From long review by Bernard Frank, J. Soil & Water Cons. 10(2).]

Many points of view, some of them conflicting, were presented at the Conference. "The report skillfully presents the gist of the statements or comments made by the individual conferees, together with the summaries of the eight section discussions prepared by the respective chairmen." An appended "Guide to Principal Subjects" permits quick selection of material on any given topic. Among the numerous subjects considered pro and con are the public lands issue, dependence on foreign resources, flood and siltation problems, small watershed projects, large-scale engineering developments, unrestricted mining operations, wilderness and wildlife values, and competition for space by different forms of land use. An important aspect of the report is that it brings together a variety of views on each problem and thus allows a reader to see what opposition and support meet the causes he himself supports.

GENERAL CONSERVATION, WATER, AND CLIMATE--Continued

Tannehill, I. R. (Formerly Asst. Chief, U. S. Weather Bur.) MORE DRY YEARS AHEAD. Reclamation Era 41(1): 3-4, 12, illus. Feb. 1955.
Our weather goes in wet and dry cycles of 20-24 years. The 1930's were dry, the 1940's were wet. Now we are in another dry period. The next wet period will begin in the 1960's. However, no period has all wet or all dry years, and there tends to be a break in the middle of each dry period. "To put it in a few words, the country is now in a dry cycle that is likely to hold on for 7 or 8 years longer. Not all of these years will be dry, and none of them is apt to be dry in all parts of the country. Two or three of them are apt to be fairly wet in most of the States but, as a whole, the block of years extending to 1962 will average considerably drier than normal. In several of these years there will be dust blowing again in the Southwest, especially in the late winter and early spring."

SOILS

Austin, R. C., and D. H. Baisinger. (Crown Zellerbach Corp., Camas, Wash.) SOME EFFECTS OF BURNING ON FOREST SOILS OF WESTERN OREGON AND WASHINGTON. J. Forestry 53(4): 275-280, graphs. Apr. 1955.
Studies revealed that burning reduced water-holding ability of soil by 34%; eliminated 75% of organic material; caused loss of 67% of nitrogen; increased by 2-8 times the amount of easily soluble phosphorus, potassium, calcium, and magnesium; and raised pH from 4.5 to 7.6, which is unfavorable to conifers. The unfavorable factors persisted to a high degree for at least two years, but the surplus of most minerals was lost by leaching. "Slash or forest refuse burning does, in many instances, degrade forest soil so that regrowth is unsatisfactory..."

Beesley, T. E., and others. SOIL SURVEY OF COCKE COUNTY, TENNESSEE. US Soil Cons. Serv., Series 1944 no. 4. 1-171 p., illus. + large folding maps. Mar. 1955. Price not stated. Order from Superintendent of Documents.

Jacks, G. V. SOIL. Philosophical Library, N. Y. 221 p., illus. 1954. $5.00. [From review by S. A. Wilde, J. Forestry 53(3).]
Wilde considers this a good book, one written well and simply for the practical man. Jacks has shunned the bewildering technical jargon of his field. "'My aim,' states the author, 'has been to place before the reader the latest findings on each aspect of the subject in as simple a manner as possible without diverging too far from the strict principles of scientific orthodoxy.' This task is accomplished in thirteen chapters covering definition of soil, architecture of the soil profile, soil chemistry, water relations, macro- and micro-population, humus, cultivation of soils, plant-made and man-made soils, soil classification, soil erosion, and the history of British soils." Forest soils and the importance of their microbiology receive due attention. "Jacks has written a treatise of merit because he has the ability and the courage to call things by their proper and simple names. His book is interesting and thought provoking. The warm glow of humor, brightening many of its pages, is a gratifying experience, rare in the literature..."

Rogers, O. C., and others. SOIL SURVEY OF NEWTON COUNTY, INDIANA. US Soil Cons. Serv., Series 1941, no. 14. 1-144 p. + large folding maps. Mar. 1955. Price not stated. Order from Superintendent of Documents.

Toth, Stephen J. (Rutgers U.) SOIL FACTORS AFFECTING WILDLIFE AND FISHERY MANAGEMENT. Proc. NE. Sect. Wildl. Soc. et al., Mar. 1955. 9 p.
Technical discussion of how certain soils of NE. should be used and fertilized.

SOILS--Continued

Vlamis, J., A. M. Schultz, and H. H. Biswell. (U. Calif., Berkeley.) BURNING AND SOIL FERTILITY. Calif. Agr. 9(3): 7, graphs. Mar. 1955.
Two Calif. forest soils were studied for effects of prescribed burns. Burns were of 2 types: light broadcast burns, and small, hot burns of dry material gathered into piles. Soils were tested 1 and 2 seasons after burning. Lettuce and barley seedlings were grown in soil samples that were untreated or treated with varying proportions of nitrogen, phosphorus, and potassium. Hot burns increased nitrogen-supplying power of soil by 3-8 times; light burns, 2-4 times. Both burns increased available phosphorus by 10 times in one soil. The other soil fixed phosphorus, so little was available to plants. Enough potassium was available in both soils without burns.

Wildermuth, Robert, and others. SOIL SURVEY OF HURON COUNTY, OHIO. US Soil Cons. Serv., Series 1942, no. 9. 1-157 p., illus. + large folding maps. Mar. 1955. $1.75 from Superintendent of Documents.

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